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PAPER TRADE JOURNAL

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

ESTABLISHED IN 1872

Vol. LXXV. No. 10 NEW YORK AND CHICAGO, SEPTEMBER 7, 1922

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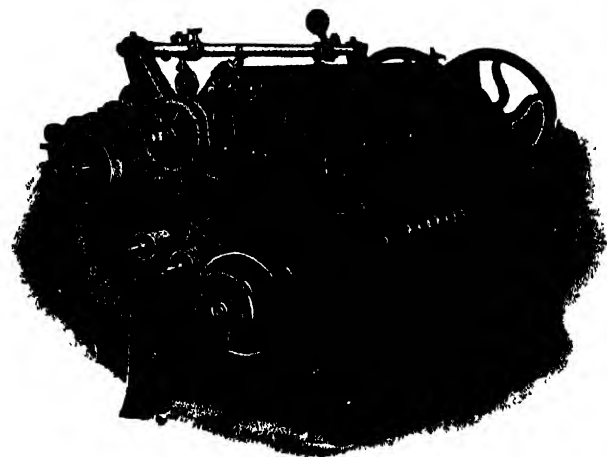
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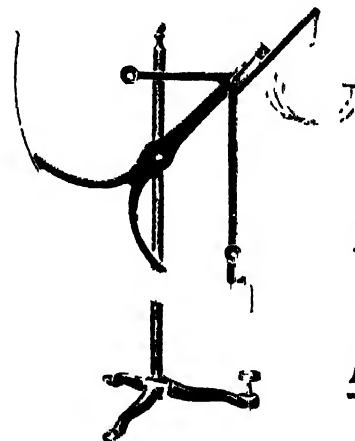
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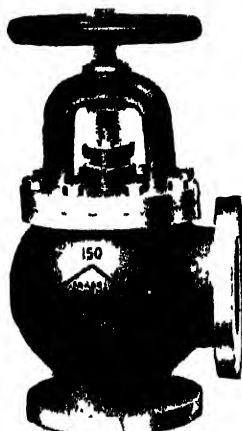
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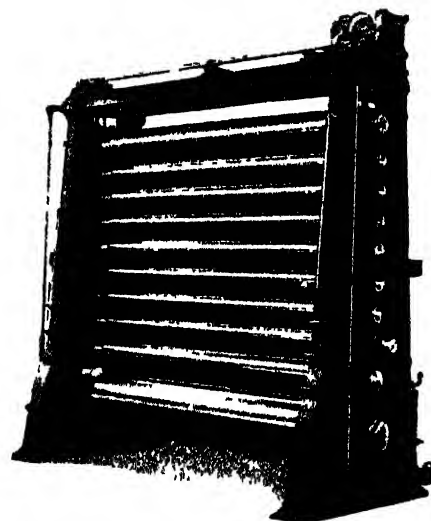
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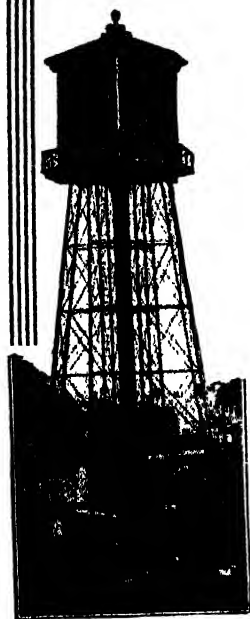
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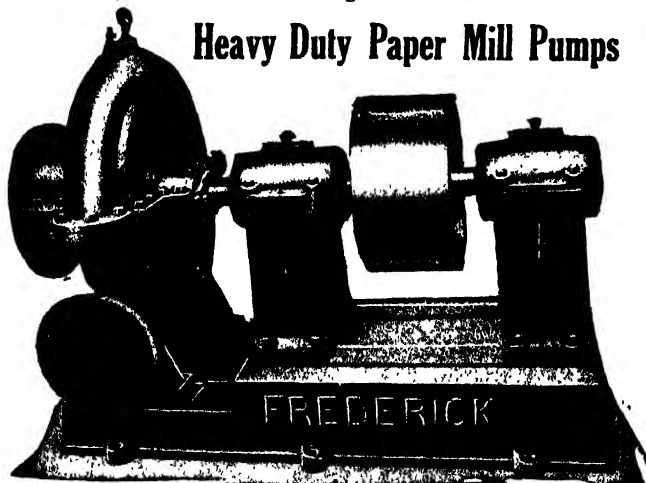
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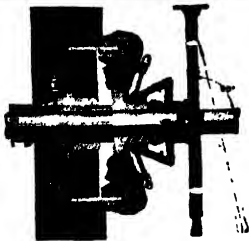
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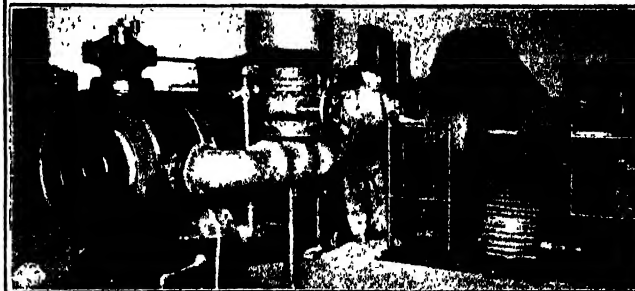
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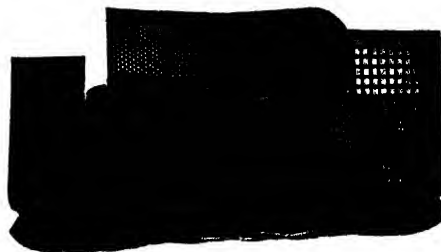
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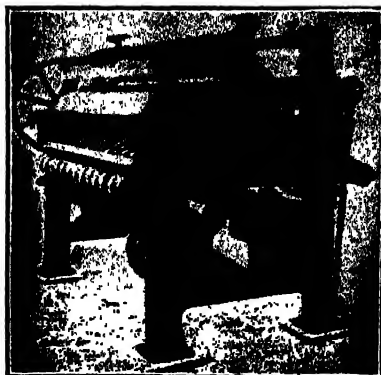
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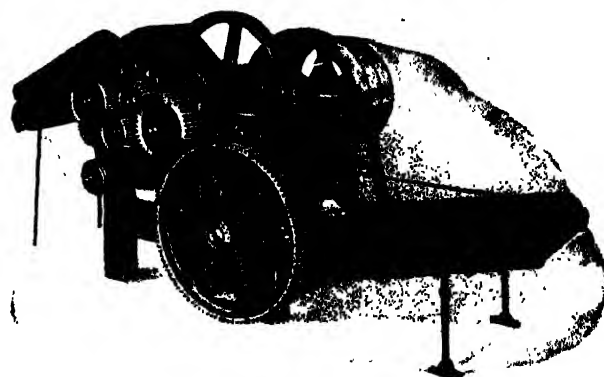
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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTY-FIRST YEAR

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Cable Address Catchow, New York

Western Publication Office—431 S. Dearborn Street, Chicago
New England Office—Room 46, 127 Federal Street, Boston

Washington Office—L. M. Lamm, 63 Home Life Bldg.
Western New England News Office—Michael Connor, Holyoke
London Office—Stonhill & Gillis, 58 Shoe Lane

THE PAPER TRADE JOURNAL is the pioneer publication in its field, and has for many years been the recognised Organ of the Paper and Pulp Industry. Its circulation is greater than the combined circulation of all other publications in the field. Entered at New York Post Office as second-class mail matter.

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AMERICAN STATIONER AND OFFICE OUTFITTER (Weekly) Per year, \$3
LOCKWOOD'S DIRECTORY OF THE PAPER Per copy, 57
STATIONERY AND ALLIED TRADES (Annual) }

Vol. LXXV. No. 10

NEW YORK AND CHICAGO

Thursday, September 7, 1922

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PRODUCTION OF ALL PAPER DURING THE MONTH OF JULY

According to Figures Just Furnished by the Federal Trade Commission the Supplies on Hand at the Mills at the End of the Month of News Print Equaled Five Days' Average Output, of Book Paper Thirteen Days' Average Output, of Paper Board Ten Days' Average Output, of Wrapping Paper Twenty-nine Days' Average Output, and of Bag Paper Seven Days' Average Output.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 30, 1922.—The tabulation below is a summary of production, shipments, and stocks of paper mills in the United States, as reported to the Federal Trade Commission, for the month of July, 1922. This summary is compared with the month of July, 1918 to 1921, inclusive.

The average production for all grades, except boxboard, is based upon the production for the years 1917 to 1921, inclusive, and the average stocks are based upon the stocks carried for the years 1918 to 1921, inclusive.

Figures for boxboard prior to March, 1920, were included in paperboard. The average production and stocks for boxboard are based upon the figures tabulated during the period March, 1920, to December 31, 1921.

The production has been classified for convenience into 12 grades, according to the grades of paper manufactured by the reporting mills. Some mills making several grades appear in more than one group, which causes duplication in the body of the tonnage tables in the number of mills.

For each grade the number of mills includes all mills commonly operating on that grade, regardless of whether they produced any tonnage of that particular grade during the month. In other words, it includes all mills reporting either production or merely stocks or shipments of that grade.

The stocks of paper carried by different mills depends not only upon the condition of the market but also upon the kind of paper made, trade customs, etc.

Tonnage Summary

Production, Shipments and Stocks of Paper, by Grades, for the month of July, 1922, compared with 1921, 1920, 1919 and 1918, together with average production and stocks.

Grade	Num- ber of Mills	Stocks on hand 1st of month, Net tons	Produc- tion, Net tons	Ship- ments, Net tons	Stocks on hand end of month, Net tons
News Print (Standard and Special Grades of News):					
July, 1922	82	23,367	120,839	123,050	21,156
July, 1921	92	26,629	94,247	95,357	25,519
July, 1920	89	23,990	120,853	131,821	22,022
July, 1919	76	26,115	113,929	111,819	28,225
July, 1918	67	26,161	108,523	109,772	24,912
Average	..	..	110,000	..	25,307
Standard News (Included in News Print):					
July, 1922	69	18,078	111,682	113,394	16,366
July, 1921	74	22,104	86,139	87,279	20,964
July, 1920	74	20,976	118,810	120,659	19,127
July, 1919	54	30,023	101,850	98,548	23,325
July, 1918	50	19,812	98,223	99,400	18,635
Average	..	..	99,700	..	20,900
Book (M. F., S. S. C. and Coated):					
July, 1922	92	41,456	74,435	77,371	38,520
July, 1921	90	40,253	48,527	51,211	37,569
July, 1920	94	22,099	95,526	95,076	22,549
July, 1919	92	36,186	75,613	77,787	34,012
July, 1918	94	30,707	66,177	65,379	31,505
Average	..	..	73,325	..	30,305
Paperboard—Total (Straw, Fiber, Leather, Chip, Box, Etc.):					
July, 1922	224	67,479	165,551	168,997	64,033
July, 1921	240	68,097	112,265	115,642	64,720
July, 1920	249	37,860	218,771	217,334	39,097
July, 1919	246	62,018	169,593	174,051	57,560
July, 1918	233	38,630	175,550	173,942	40,238
Average	..	..	157,850	..	49,989

Grade	Num- ber of Mills	Stocks on hand 1st of month, Net tons	Produc- tion, Net tons	Ship- ments, Net tons	Stocks on hand end of month, Net tons
Boxboard (Included in Paperboard):					
July, 1922	129	32,048	117,391	119,846	29,593
July, 1921	136	33,189	83,450	85,736	30,903
July, 1920	149	16,361	161,453	160,595	17,219
Average	..	..	111,425	..	26,048
Wrapping (Kraft, Manila, Fiber, Etc.):					
July, 1922	147	71,259	65,481	67,372	69,368
July, 1921	153	61,139	45,090	44,519	61,710
July, 1920	150	21,710	73,467	72,832	22,365
July, 1919	169	68,912	63,769	74,030	58,631
July, 1918	149	37,407	67,211	65,828	38,790
Average	..	..	59,150	..	43,482
Bag (All Kinds):					
July, 1922	46	4,010	17,275	17,470	3,815
July, 1921	45	3,159	6,661	6,626	3,194
July, 1920	40	2,662	19,055	19,616	2,101
July, 1919	42	4,523	15,934	16,401	4,056
July, 1918	31	3,184	14,976	14,697	3,463
Average	..	..	13,275	..	3,362
Fine (Writing, Bonds, Ledgers, Etc.):					
July, 1922	103	38,674	27,767	28,820	37,621
July, 1921	107	40,808	16,327	17,750	39,385
July, 1920	113	27,272	34,078	33,911	27,439
July, 1919	116	41,898	30,036	31,603	40,331
July, 1918	101	25,241	30,994	28,161	28,074
Average	..	..	26,675	..	33,192
Tissue (Toilet, Crepe, Fruit Wrap pers, Etc.):					
July, 1922	95	10,767	14,669	15,643	9,793
July, 1921	93	8,056	12,238	12,209	8,085
July, 1920	100	5,510	16,850	16,993	5,167
July, 1919	91	9,027	14,685	14,971	8,741
July, 1918	82	5,362	12,664	12,610	5,416
Average	..	..	12,275	..	6,737
Hanging (No. 2 Blank, Oatmeal, Tile, Etc.):					
July, 1922	26	7,154	5,000	5,319	6,835
July, 1921	22	8,538	4,459	4,996	9,001
July, 1920	23	1,112	9,037	8,768	1,381
July, 1919	22	7,125	6,643	7,259	6,509
July, 1918	18	4,240	5,305	6,083	3,462
Average	..	..	6,950	..	4,693
Felts and Building (Roofing, Sheathing, Etc.):					
July, 1922	47	9,354	37,297	37,548	9,103
July, 1921	52	10,528	17,425	17,518	10,435
July, 1920	55	11,900	33,053	32,430	12,523
July, 1919	52	9,030	29,402	29,858	8,574
July, 1918	41	5,791	23,272	23,077	5,986
Average	..	..	25,025	..	8,853
Other Grades (Specialties Not Otherwise Classified):					
July, 1922	105	19,546	24,600	23,730	20,416
July, 1921	100	20,580	13,190	13,844	19,926
July, 1920	95	14,184	28,808	28,379	14,613
July, 1919	77	13,854	19,260	18,852	14,262
July, 1918	45	5,214	21,955	21,127	6,042
Average	..	..	19,650	..	14,466
Total—All Grades:					
July, 1922	..	294,066	552,914	565,320	280,660
July, 1921	..	288,787	370,429	379,672	279,544
July, 1920	..	168,299	658,518	657,360	169,457
July, 1919	..	278,688	538,864	556,631	260,921
July, 1918	..	181,937	526,627	520,676	187,888
Average	..	..	504,175	..	220,386

The following stocks were reported on hand at terminal and delivery points on July 31, in addition to the mill stocks shown in the tabulation: News print, 187 tons; book paper, 3,084 tons; fine, 202 tons; paper board, 100 tons; wrapping, 11 tons, and "other grades," 284 tons; totalling 3,868 tons.

Stocks of all grades excepting "other grades" decreased during the month. Stocks of all grades reported by manufacturers at the end of July amounted to 284,528 tons, including the stocks at terminal and delivery points. In addition to these stocks, jobbers and publishers reported news print stocks and tonnage in transit aggregating 210,677 tons.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic mills on July 31, with their average production, based upon the combined production for 1918 to 1921, inclusive, the figures show that:

News print mill stocks equal 5 days' average output.
 Book paper mill stocks equal 13 days' average output.
 Paper board mill stocks equal 10 days' average output.
 Wrapping paper mill stocks equal 29 days' average output.
 Bag paper mill stocks equal 7 days' average output.
 Fine paper mill stocks equal 35 days' average output.
 Tissue paper mill stocks equal 20 days' average output.
 Hanging paper mill stocks equal 25 days' average output.
 Felts and building paper mill stocks equal 9 days' average output.
 Miscellaneous paper mill stocks equal 26 days' average output.
 Total paper mill stocks of all grades equal about 14 days' average output.

Imports and Exports

The imports and exports of all grades of paper for June, 1922, compared with June, 1921, as shown by the records of the Department of commerce, were as follows:

	June, 1922		June, 1921	
	Pounds	Value	Pounds	Value
Imports:				
News Print	168,673,627	\$5,889,695	92,440,327	\$4,928,573
Book Paper	131,847	11,625	39,513	4,206
Wrapping	5,314,717	225,044	1,427,122	72,159
Hanging		73,138		34,231
All Other Grades (a)		291,868		254,455
Exports:				
News Print	5,806,946	264,214	1,201,318	73,670
Book Paper	3,414,530	294,892	2,169,928	248,203
Paperboard		312,611		275,085
Wrapping	3,014,638	210,409	1,805,406	146,944
Bag		86,487		42,409
Fine		147,851		177,092
Tissue		107,952		79,092
Hanging		19,059		11,369
All Other Grades		326,908		383,762
Total Imports		6,491,370		5,293,624
Total Exports		1,770,293		1,437,895

(a) Includes some paper already converted into commercial articles.

News print is the only grade of which the United States is a heavy importer. The bulk of this tonnage is imported from Canada.

The value of the exports of news print for June, 1922, was about 4 per cent of the imports.

The value of the total imports of all grades was about 5 per cent more than for May.

The value of the total exports for June, 1922, was less than the imports by \$4,721,077, and was \$332,398 more than the exports for June, 1921.

News print, book and paper board and wrapping were the principal grades exported, as to value.

Loss of Production

The idle machine time reported to the Commission for July, 1922, is shown by grades in the attached tabulation.

The number of machines includes only those machines for which idle time was reported during the month. It does not include the machines in 30 mills that were closed down completely for the month.

The total number of machines may include duplications because the reports may count the same machine twice, if idle for different reasons during different parts of the month or if idle part of the time on one grade and part of the time on another.

The reasons tabulated for lost time are "lack of orders" and "repairs." "Other reasons" include "lack of material," "lack of water power," etc.

The time lost in July, 1921, is given by grades and reasons for purposes of comparison.

Wage Increases in Fox River Valley

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 5, 1922.—Salary increases approximating 10 per cent became effective at the mills of the Consolidated Water Power and Paper Company and the Nekoosa-Edwards Company on September 1. The Consolidated company announced the increase for men drawing from 32 to 40 cents an hour in the Wisconsin Rapids and Biron divisions. The minimum wage for unskilled labor, with a very few exceptions, in those two mills now is \$3.15 a day. The scale is practically the same as that in force prior to March 31, this year.

All the mills in the Fox river valley which decreased wages last spring have granted increases which approximate the scale last March. All the mills are running at near capacity. Most mills have sufficient fuel to keep them operating for a little longer. Switching service on the Chicago and Northwestern Railroad in Appleton and Neenah was suspended for a day or two because the equipment was not in condition for use but it worked only a slight hardship on paper mills. Transportation, however, is becoming a problem, inasmuch as only one freight train a day is operating on the Northwestern road in the Fox river valley. Several trains have been annulled because of insufficient equipment.

LOSS OF PRODUCTION

MONTH OF JULY, 1922 (WITH JULY, 1921, FOR COMPARISON)

	Lack of Orders		Repairs		Other Reasons		Total	
	1922	1921	1922	1921	1922	1921	1922	1921
News Print:								
Number of machines	11	11	10	13	11	21	52	45
Total hours idle	1,637	1,770	324	909	494	2,552	2,455	5,231
Book Paper:								
Number of machines	61	131	29	14	41	7	131	152
Total hours idle	7,820	31,356	353	3,578	1,085	1,310	9,258	36,244
Paperboard:								
Number of machines	104	214	79	31	66	49	279	294
Total hours idle	16,617	57,351	6,878	7,151	17,543	13,683	41,038	78,185
Wrapping:								
Number of machines	31	63	40	27	41	27	112	117
Total hours idle	4,395	13,436	1,704	2,993	2,590	4,848	8,589	21,277
Bag:								
Number of machines	6	12	24	9	13	7	43	28
Total hours idle	1,239	7,111	995	814	987	675	3,221	4,700
Fine:								
Number of machines	58	107	16	36	37	11	111	154
Total hours idle	17,261	29,991	1,686	3,713	2,859	2,060	21,806	40,763
Tissue:								
Number of machines	36	34	22	36	35	21	93	91
Total hours idle	7,476	8,386	2,692	5,343	2,133	3,494	12,301	17,223
Hanging:								
Number of machines	4	8	0	2	3	0	7	10
Total hours idle	1,208	2,360	0	296	303	0	1,511	2,656
Felts and Building:								
Number of machines	16	37	4	8	22	6	42	51
Total hours idle	2,559	9,394	269	773	2,340	1,469	5,168	11,636
Other Grades:								
Number of machines	19	67	16	17	22	7	57	91
Total hours idle	4,740	11,078	1,570	3,587	3,061	1,350	9,371	16,015
Total number of machines	346	684	240	193	341	156	927	1,032
Total hours idle	64,852	168,333	16,471	34,156	33,395	31,441	114,718	233,930

PRICE BROS. & CO. TO START PAPER TOWN AT SAGUENAY

Plans Call for the Building of a News Print Mill and a Town on the Garden City Plan for a Population of Some 7,000 Inhabitants—Contract For First Unit of \$13,000,000 for the Wigwam Pulp & Paper Co.'s Pulp and Paper Plant at Elko, B. C., is Awarded to McDougall & McNeill—Fraser Co. Ltd. to Erect Pulp and Paper Mill on Tobique River, N. B.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 4, 1922.—It is reported here that Price Brothers & Co. are contemplating the commencement next year of the town and mill at Saguenay, plans for which were made some time previous to the slump in the news print industry. The market has improved to such an extent that it is considered that it will not be long before a further extension of the capacity of Canadian mills will be necessary to keep up with the demand. The fact that at the present time, which is generally looked upon as the slack season, all the news print mills in Canada are working to capacity, is significant in connection with future needs. The original proposal of Price Brothers was to establish a new town four miles east of Chicoutimi to be called Saguenay and to build here a news print mill with a capacity of between four and five hundred tons per day. The plans for the town are the most elaborate yet to be adopted by any news print company in Canada. They include the building of houses for workmen, and the laying out of the town on garden city plans. The town will have a population of some seven thousand inhabitants, and will be in a place where there is now no inhabitants whatever. The site is situated on tide-water, free from the usual tide delays that are experienced at Chicoutimi. An extensive level plain stretches to the south and west, and the whole area is most fittingly adapted for the large manufacturing and industrial centre. Some work has already been done in connection with the development of the necessary water power. When this proposed new plant is operating, the company will have a total output of between eight to nine hundred tons of paper and paper-board per day.

Western Firm to Erect Pulp Mill

The contract for the first unit of the \$13,000,000 pulp and paper plant at Elko, B. C., has been awarded to McDougall & McNeill, contractors, of Vancouver and Calgary, according to word received by Alexander McDougall from his father, A. C. McDougall, senior member of the firm yesterday. The plant is to be erected for the Wigwam Pulp and Paper Company, and is financed by prominent Canadian and American newspapers. The first unit will have a capacity of 100 tons daily and will cost about \$3,500,000, while the remaining two units, to be commenced just as soon as the first unit is in operation, will bring the total expenditures to \$13,000,000.

The Fraser Co.'s Plans

Another large pulp and paper mill, plans of which are in abeyance for the present, is that proposed to be erected by the Fraser Co., Ltd., on the Tobique River, N. B., at the junction of that river with the St. John river. This mill will give employment to between 200 and 300 men. The scheme has been delayed owing to the financial situation, but it is expected that it will be taken up in the near future. Meanwhile objections to the proposed mill have been entered with the New Brunswick government by salmon fishermen. The Tobique Fishing Club contends that the construction of a dam across the Tobique near the mouth of the tributary of the St. John river would destroy the salmon fishing for which the Tobique has for many years been noted. It is argued that the salmon from the St. John river would be unable to cross the dam,

whether or not a special sluiceway was installed. On the contrary the Fraser Companies, Limited, claim the salmon fishing would not be materially injured.

Advance in Paper Stocks

An advance in the price of the stocks of the leading news print companies has been registered during the past week on the Montreal Stock Exchange, due to the fact that it is now considered that the possibility of rate cutting by German competition is now considered to have disappeared, and that there are good prospects for an advance in the price of news print in the not distant future. Not long ago the fear was expressed that the market would not be able to absorb the output from extensions and new mills in Canada. The contrary has proved to be the case. Laurentide Company with two machines of 75 tons a day capacity or 150 in all, additional, is working to the full; Abitibi has two new machines of 85 tons each, and one of 50, and other machines tuned up, so that the output of last year of about 235 tons a day has sprung to nearly 500 tons a day; Spanish River, with well over 650 tons a day, or an average of some 150 tons a day over that of last year, and the new International Paper Company's mill at Three Rivers with a present output of about 150 tons a day—all new the last few months—these together give an increase of at least 600 tons a day in Canada and all is finding a market.

Pulp Resources of Northern Ontario

During the past week a large delegation of teachers has visited the mills of the Abitibi Power and Paper Company at Iroquois Falls and the opportunity has been taken by the Board of Trade of that city to distribute among them a pamphlet dealing with the forest wealth of Ontario, and to solicit the help of the teachers in general educational work for the preservation of the forests. The following is the gist of the information supplied regarding the forest wealth of the province:

The forest area of Ontario, almost all in New Ontario, is 150,000 square miles.

Estimated timber on Crown lands:—

Pine10,000,000,000 feet

Pulpwood200,000,000 cords

Provincial revenue from forests in 1920: \$2,700,000.

Fire Destruction: Every summer 425,000 acres of forest are burned over.

Fire Protection: 1,000 men scattered over 100,000,000 acres at a cost of half a million dollars a year.

The pulp and paper industry in Canada is the third most important in exports and in revenue produced to the Governments.

In Ontario the investment runs over \$100,000,000, close to \$90,000,000 of this being in Northern Ontario.

What a Planted Forest Can Do

The Chief Forester of the Laurentide Company estimates that 250 square miles will yield 100,000 cords of pulpwood in perpetuity. This refers to a planted forest which should yield 75 cords an acre, whereas the natural forest in Eastern Canada now yields only from four to ten cords an acre.

Laurentide Co. Issues Excellent Report

The annual report of the Laurentide Company for the fiscal year ended June 30, 1922, has just been issued, and shows the company to be in a much stronger position than shareholders had dared to hope, in view of the unsettled state of the market over the period referred to. Despite the sharp reduction in profits natural to the period of stagnant markets, declining prices, and high-priced wood, the company met all charges, earned and paid its dividends and had a balance to the good. In addition it has materially reduced its bank loan and accounts payable, and has written down inventories to the rock bottom. President Chahoon, in his remarks to

(Continued on page 20)

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PRICE BROS. & CO. TO START PAPER TOWN AT SAGUENAY

(Continued from page 18)

shareholders, says that general conditions in the news print industry are decidedly better than at the time of the last report.

"Prices," he says, "have held consistently throughout the year, and demand has increased sufficiently to absorb the new production that was brought in during the year. Your directors feel gratified that the company's strength enabled them to go through this most trying period with so little inconvenience either to the organization or the shareholders."

Operating profits for the year ended June 30, 1922, amounted to \$2,266,254, as compared with \$5,374,565 the previous year. Miscellaneous profit was down to \$94,386 from \$1,029,829, while profits from investments were \$332,513, as compared with \$319,639. The total income of the company was, therefore, \$2,693,154, as compared with \$6,724,032 the previous year. Interest charges last year amounted to \$440,631, as compared with \$885,260. The deduction of \$458,461 as reserve for depreciation of plant leaves net profits of \$1,794,061, or slightly over 6.4 per cent on the stock of the company, as against \$4,515,928 for 1920-21. Payment of dividends amounting to \$1,728,000 left a balance for the year of \$66,061 to be carried forward to surplus account, which now stands at \$1,423,467. The surplus for 1920-21 was \$787,928 after deduction of \$2,000,000 as reserve for reduction of inventories and \$1,322,843 as reserve for taxes, depreciation and depletion.

Profit and Loss Accounts

The profit and loss accounts of the past two years compare as follows:

	1922.	1921.
Operating profits	\$2,266,254	\$5,374,565
Miscellaneous profit	94,386	1,029,829
Investments ..	332,513	319,637
Total income ..	\$2,693,154	\$6,724,032
Interest	440,631	885,260
Balance ...	\$2,252,523	\$5,838,772
Plant depreciation ..	458,461	1,322,843
Net profits	\$1,794,061	\$4,515,928
Dividends	1,728,000	1,728,000
Surplus ...	\$66,061	\$2,787,928
Inventory Res.		2,000,000
To surplus account	\$66,061	\$787,928

As presented in the statement, there is a decline of nearly \$2,000,000 in working capital, but there would actually seem to be a slight improvement in current position. The depreciation reserve of \$2,000,000 which was set up the previous year has been applied to logs and other supplies and disappears this year from among the liabilities, while the inventories are shown at a reduction of nearly 50 per cent.

Outstanding among the current assets is the reduction in inventories from \$8,392,812 to \$4,771,436. Accounts receivable at \$756,045 are less by over half a million, while mill supplies at \$652,835 are down about \$300,000.

Perhaps the most striking feature of the balance sheet is the reduction of the bank loan from \$5,067,945 to \$3,572,960. Bills and accounts payable are down to \$657,347 from \$1,301,370. Tax reserve of \$573,559 is down from \$1,095,918 indicating the payment of a half million on this account.

The working capital position of the company for the past two years compares as follows:

	June 30, 1922.	June 30, 1921.
Current assets	\$11,296,891	\$15,958,254
Current liabilities	5,792,764	8,475,633
Working capital	\$ 5,504,127	\$ 7,482,621

Geo. M. McKee Retires from Donnacona

George M. McKee has retired from the position of general manager of the Donnacona Paper Company, Limited, Donnacona, Que., but will retain his place on the board of directors. The duties of general manager have been assumed by Robert P. Kernan, second vice-president of the company, who has been in charge of woods operation for some years. Mr. McKee is president of the Canadian Pulp and Paper Association. The Donnacona mill, admittedly one of the best located and most economically managed in Canada, has been brought to a high degree of efficiency under Mr. McKee's management.

New Market for B. C. Pulp

Pulp has been shipped from Ocean Falls, B. C., during the week to Stockton, Cal., this being the first consignment of pulp to that destination, all previous shipments going to Astoria. A full cargo of paper was also sent to San Francisco in addition to which a cargo was loaded for Australia.

New Mill at Haileybury

Operations have commenced at the new mill of the Temiskaming Pulp and Paper Company, recently erected at Haileybury, Ont., at a cost of approximately \$1,000,000. The plant will have a daily production of forty tons of ground wood pulp, which will be shipped to Chicago, Kalamazoo, and points in New York state.

The Reduced Freight Rates

The recent reduction in freight rates has had a good effect in the province of New Brunswick, stimulating the export of lumber, and from indications the accumulation of years in the mill yards and vacant lots all over the province will be moving out. Some of the smaller mills have been shipping quite steadily to the United States market where the demand has been good owing to building booms. In addition to the demand from the United States for lumber there also is an increased demand from overseas.

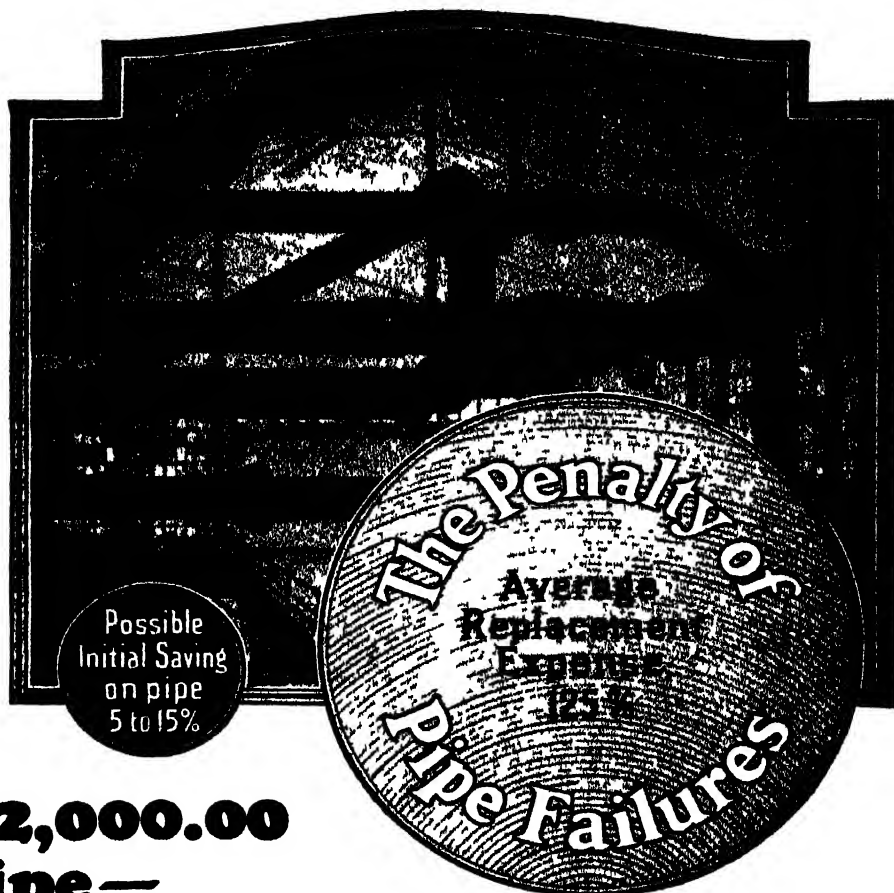
Progress on Peshtigo Paper Co.'s Plant

APPLETON, Wis., September 5, 1922.—Great progress is being made by the construction crew at the Peshtigo Paper Company's fiber mill at Peshtigo. Wood forms for the elevator tower in the new bleach rooms are high in the air and the long pipe line is almost completed. A new boiler house will be built at the plant in a few days.

A meeting of directors of the company was held a few days ago to consider reconstruction plans and operation of the mill. It was announced that the company has a sufficient supply of coal to keep operating for some time.

Increase in Paper Mill Taxes

APPLETON, Wis., September 5, 1922.—Very substantial increases in papermill values for taxation purposes were made by the city of Neenah last week. The Badger and Globe mills of the Kimberly-Clark Company were increased \$51,000, and the Neenah mill assessment was boosted \$25,000, making an assessment of \$316,000 for the property. The Neenah Paper Company's property was increased \$150,000 and now is assessed at \$750,000 and the Bergstrom Paper Company's property is valued at \$507,500.



“We saved \$2,000.00 on the pipe—

or at least we thought we did.” So spoke a member of a building committee. “That was only six years ago,” he continued, “and the pipe is already badly rusted. We are now compelled to replace the whole pipe job, at a cost of twenty to thirty thousand dollars.”

Here, as in so many other cases, the heavy cost of replacing poor pipe was never thought of when the pipe was first installed. Only too late did those responsible realize the costly economy of cheap pipe.

Cost analyses of hundreds of pipe systems in factories, power plants, office buildings, residences, etc., reveal the astonishing fact that the pipe itself, on the average, amounts to only 10 to 20 per cent of the installation or replacement cost.

The extra cost of Byers pipe, therefore, becomes a small premium of only 5 to 15 per cent, paid but once, to insure at least 100 per cent longer life of the whole investment.

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Although Latter Days of August and Early September are Usually Slow They Are Very Much More Active Than Usual This Year, Strengthening the Impression That the Fall Will be an Unusually Satisfactory One—Paper Stock Is Especially Active, Sales Being Made at the Outside Quotations—Broken Package Evil Continues Problem of Considerable Interest to the Trade.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, Pa., September 5, 1922—What from the experience of the past the trade has come to regard as the worst week of the whole year, the seven days preceding Labor Day, passed with entire satisfaction this year and left in its wake nothing but pleasant memories. And now with the celebration which really marks the turning point between summer and Fall over the trade approaches the future with a greater amount of confidence and satisfaction than it has had for several seasons even including the very active war period.

The passing of the week was quiet in comparison with the preceding period but almost was active in contrast with the usual last week of August. Ordinarily buyers of both printing and coarse papers at this period either are on vacation or are recovering from it and in both circumstances are inclined to postpone any ordering until after the holiday, but this year during the last week of August very unusual conditions existed. The dominant factors of course were the coal and transportation situation and both these had much to do with inducing buyers to lay in at least moderate amounts of stock to avoid disappointing consequences. And then too the tariff legislation down in Washington had a general influence and a very decided one on the lines directly affected. And finally reawakened industrial and commercial activity after a half year or more of slumber of course left its impress on the paper market and there was some unusual buying in preparation for the good times ahead. With all, however, the situation as it was brought to the distributors by personal visits of mill representatives and correspondence from home offices was a peculiar one. One of the jobbers for instance received in the same mail two mill quotations for the identical grade of paper—and one was \$42.50 and the other was \$60.00. The contrast was explained largely by the fact that the mill making the low quotations is in a region where wood is plentiful and stock cheap and being able to use wood and thus escape high payments for coal is able to produce at a much less rate. And there are contrasts too in other prices. Toilet tissues for instance are being quoted at a price which is lower than it has been at any time during the last two decades. One offer from a representative mill was at \$4.65 sidewalk delivery for cases of 100 rolls of 1,000 sheets toilets. The best grade of jute stock has been offered on the market at $\frac{3}{4}$ c a pound, as against from three to five times this amount which ordinarily maintained. On the other hand boxboards which sometime ago sold at little more than the actual cost of the raw material, it being axiomatic that for their production there is required a ton of waste papers and a ton of coal for every ton of board is now selling in the neighborhood of \$60.00 and is still going upward. The price indeed being fixed by the competition which exists among the paperbox manufacturers in their eagerness to get supplies on hand fearful of a board famine through coal shortage and freight tie up. All the grades of coarse papers are firm in price and some are advancing. Number 2 Kraft moved upwards five dollars a ton and butchers fibers went up a like amount. As also did Manilas. Screenings are very scarce and there are but few offerings.

In the fine paper market prices are exceedingly firm and an early advance on book and perhaps as well coated and covered papers and also on cheap sulphite papers is anticipated. There still continues to be more inquiries than orders, but the volume of these increased slightly during the week and this week it is expected a large number of inquiries will be converted into orders.

Paper Stock Active

The greatest activity of the week, however, was among the paper stock packers. They are able to dispose of at the outside quotations on the basis of those published by the PAPER TRADE JOURNAL, all of the stock they are able to gather together. While the collectors again are busy after the six months of idleness, returns from them have not yet come in in sufficient volume largely to augment the supplies from regular producers of paper waste and for that reason there is a real lively competition on the part of the larger packers to get stock with the consequence that prices they are offering are rising. Another element of more or less importance in boosting paper stock prices is the activity of a newly organized Waste Paper Division of the Typothetae of Philadelphia which now has more than a half hundred members. Through the contract it has made with one of the local papers it has been able to advise its members of decidedly increased returns to them, attributing the result, however, not so much to the improved market conditions as to its own work. Assistant Secretary Hamster, who is in charge of the division, has had numerous inquiries from other cities regarding its operations and during the week he wrote to the Chicago Typothetae that he was able to keep very well in touch with market conditions and proper prices because the Typothetae was a subscriber to the PAPER TRADE JOURNAL.

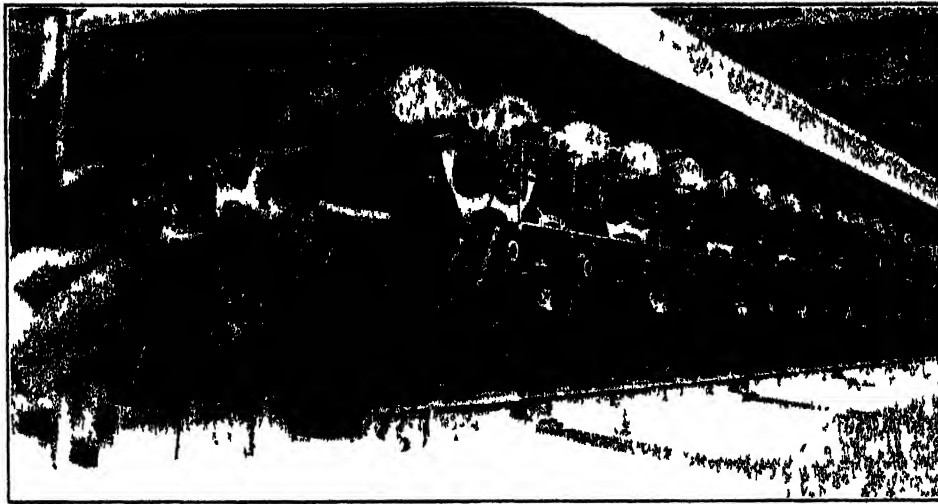
The Broken Package Problem

None of the other distributors of the city have thus far followed the precedent of the Paper House of Pennsylvania in advising its customers in a formal statement of a loss sustained by all distributors through the small order or broken package business, but a number of the houses are conducting an educational campaign through their sales organization and are pointing out to the printers and other converters of line papers the economies which will accrue alike through the printer, the paper merchant and the paper consumer if he is taught by the printer to give his orders in terms of whole reams rather than in reams and broken reams or quires. Many reports have come back from the paper salesman that when the attention of the printer was called to the matter he was found to be in a responsive and a co-operative attitude. Present plans are to continue the quite educational campaign until such a time as the field looks promising for the adoption as a trade custom of an agreement to increase the percentage of additional cost for broken reams, above the twenty-five per cent it now is. While the committee which studied the broken lot question looked with favor upon a plan not to sell in less than case lots, it is known that several of the houses which are determining factors in the situation, regard such a step as too drastic at this time, and informally have said that they would not agree to it.

Fine Paper Men to Play Baseball

Executives and salesmen of all the fine paper houses catering to the engraving and die-stamping trade and constituting the associate membership of the Engravers' Club of Philadelphia will battle on the diamond with their customers on Tuesday of next week when the Engravers' Club of Philadelphia holds its annual outing at Brown's Mills-in-the-Pines. This year the Philadelphians have extended invitations to their New York brethren and at least a dozen will come over to participate. The committee in charge consisting of Wm. A. Blaissee, of the Keating Company; Wallace F. Ott, Ott Engraving Company, and Howard R. Wilson,

(Continued on page 24)



Sturtevant Vapor Absorption System in a Canadian Mill

A Vapor Absorption System Is a Necessity Today

In the above illustration you can see the pipes which contain the nozzles, between the dryers.

They are the "business end" of a Sturtevant Vapor Absorption System used in hundreds of progressive paper and board mills throughout the United States and Canada.

The vapor is absorbed, immediately it is formed, by the air nozzles running the entire length of the dryer roll.

What does this system do? Enables the whole sheet to be dried uniformly; saves overdrying the sheet; saves felts; lessens wastage; increases production; saves excessive press roll crowning -and many other advantages fully explained in Bulletin 243. Write for your copy today.

Our Engineers or the J. O. Ross Engineering Corporation of New York will gladly look over your proposition.



HYDE PARK,
BOSTON, MASS.

ENCOURAGING ACTIVITY IN PHILADELPHIA MARKET

(Continued from page 22)

Philadelphia office of Ault & Wiborg, has been able to secure so large a number of attractive prizes that they are on display in the Chestnut street show windows of the Ott Company. While the baseball game and to a lesser extent the broom polo contest between the actives and the associates will be the big feature of the athletic program, there will also be potato, egg, back-running, balloon, shoe, sack, peanut, cigarette and three-legged races, balloon blowing and whistling. Attendance of 100 is anticipated, all assembling at 9th and Walnut streets at 9:15 o'clock for an automobile trip and dinner at the Pig'N Whistle Inn at Brown's Mills.

Quarter Century With Philadelphia Paper Co.

Ward M. Smith, superintendent of the Philadelphia Paper Manufacturing Company, was tendered a reception in honor of his twenty-fifth anniversary with this firm, at the Ritz-Carlton, Tuesday evening, August 29, by John Jacobs, president of the company.

In recognition of his services Mr. Jacobs presented Mr. Smith with a beautiful watch and chain.

Twenty-five years ago Mr. Smith came to work with the Philadelphia Paper Manufacturing Company, at which time the mill consisted of one machine, making about nine tons of box board per day. Mr. Smith has watched the mill develop from one to six machines, and through his good work has been instrumental in the growth of this concern, which now boasts of six machines (one being the largest in the world) with a capacity of five hundred tons daily.

Throughout the trade, as well as by the firm who appreciates his services so much, Mr. Smith is considered one of the best superintendents in the boxboard industry.

General News of the Trade

Joseph A. Borden, service manager of the American Writing Paper Company, will appear before the Executive Committee of the Typothetae of Philadelphia on Tuesday, September 12, its first meeting since its summer recess, to make further presentation of the company's educational sales campaign.

Alterations to the newly acquired home of the Franklin Paper Company, 923 Locust street, will begin this week, the contract having been awarded to Chas. R. Davis & Sons, the preliminary estimate being \$2,500.

Morgan H. Thomas, of the Garrett Buchanan Company, and John J. McClosky, who were appointed receivers in equity for the National Paper Tube Company of Germantown in equity proceedings, are continuing to operate the plant and are hopeful eventually of being able to pay off creditors in full. Reports that payments to several mills which are interested were being held back by Mr. Thomas were said by him to be without foundation.

The Forest Mills which Elmer E. Garrett conducts at Newton Square, Pa., being unable to secure coal for fuel successfully, is operating on cordwood, of which large supplies exist in its vicinity. It produces sheathing paper.

Thos. Kennedy, of S. Walter, Inc., is winding up his vacation in Atlantic City.

Edw. Angel, son of H. Reeve Angel, head of one of the largest paper distributors in England and located in London, was a visitor to the city during the week. The young man has just received a scholarship at Harvard and he is in the city on his first trip of inspection. He is being entertained by President Norwood A. Consideine of the Paper House of Pennsylvania.

Walter J. Hackett, formerly with the Raymond & McNutt Company and afterward with the H. J. Fleming Company, has joined the sales organization of the Paper House of Pennsylvania and is now traveling the State for it.

Distributors of the Strathmore line of goods which are "Part of

the Picture" have received notice of a slight general advance not running over an average of five per cent.

Mrs. A. Hartung, wife of the head of A. Hartung & Co., has just taken title to the stone residence with a garage at 630 West Upsal street, Germantown, which was held at \$37,500. Extensive alterations are to be made.

Preparations of the line of samples compiled in five booklets of the Valley Paper Company products is being completed and will be ready for distribution from the headquarters of the Wilcox, Walter, Furlong, Paper Company, 231 Chestnut street. The samples comprised a line of bonds and ledgers in white and colors for the printing, stationery and allied consumers. The booklets will be distributed this week.

Irwin F. Megargee, of the Curtis & Bros Company, 5th and Ludlow streets, is spending his two weeks' vacation at Ocean City, N. J.

The dual celebration of the 85th year of history of the firm of Chas. J. Cohen Company, 510 Ludlow street, and the 75th birthday of its present head, will be celebrated on September 21. He is the dean of the Philadelphia envelope trade and in addition to his mercantile activities is widely known for his prominence in civic and art circles. Henry Cohen, father of Chas. J. Cohen, established the business back in 1837, when he opened a stationery store at 37 North 5th street. In 1860 the envelope manufacturing business was started, and today the Zenith Brand is widely known and is one of the largest envelope manufacturing plants in the city.

The Westmoreland Chemical and Color Company, paper makers' colors, whose plant at 22d street near Allegheny avenue, was closed recently by the health authorities, after charges had been made that noxious fumes of sulphuric acid emanated from the smokestacks and detrimental to the neighborhood, is again running at full capacity, the company having installed a washer system which met the objections of the authorities and has eliminated all complaint.

Fifty-three Years a Traveling Salesman

[FROM OUR REGULAR CORRESPONDENT]

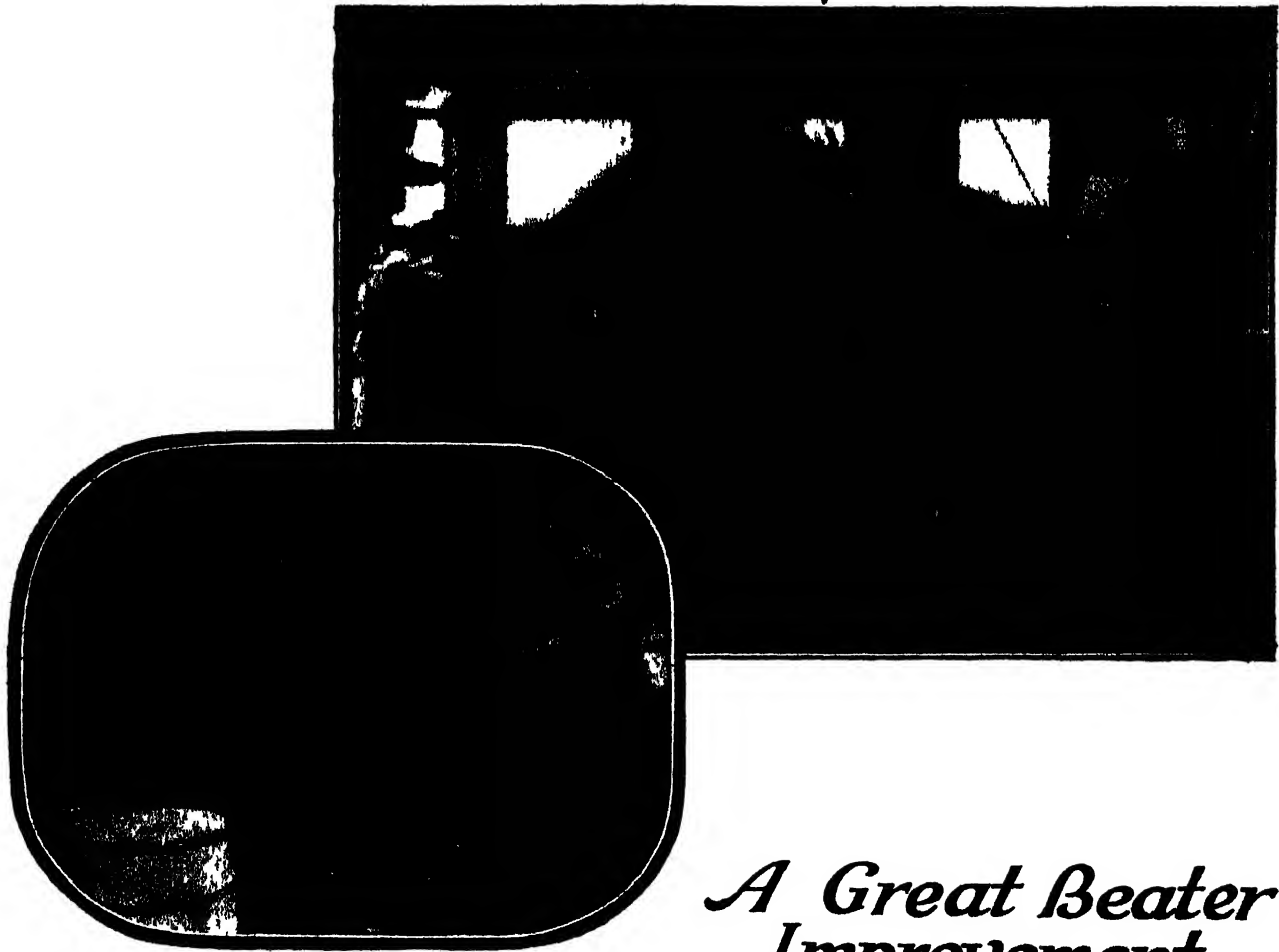
GARDINER, Me., September 4, 1922.—Charles T. Stackpole of Gardiner is believed to have broken all Maine records for continuous service on the road as a traveling salesman, having been engaged in selling paper to the merchants of Maine and New Hampshire for 53 consecutive years, and in all that time he has sold paper made only in Gardiner.

When Mr. Stackpole first started he handled a line made by Stanwood & Towner, who operated a small mill in Gardiner. Later it became Simpson & Co. and was finally purchased by Hollingsworth & Whitney. In the 53 years that he has been traveling he has always sold on commission. He says: "I was 21 years of age when I began to look out for myself. I wanted a good shipping point, so I went to the office of a paper company in Portland and made arrangements with them to handle my orders and they have done so ever since. On my last call upon them, I found that there was not a single man in the whole concern who was there when I made my first call."

Dexter Sulphite Co. May Use Oil for Fuel

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., September 5, 1922.—The practicability of burning oil in their boilers is being investigated by the officials of the Dexter Sulphite Pulp and Paper Company, of Dexter. Dr. James E. Campbell is head of the concern. It is believed that the boilers can easily be equipped for the change. The company now has only three weeks' supply of soft coal on hand, while ordinarily a 60 days' supply is on hand.



A Great Beater Improvement

There is now available a simple, inexpensive appliance which will double beater circulation or increase the capacity of a beater by at least 25%, without using any more power to do it.

This is

LEO SHLICK'S BEATER HOOD

It can be quickly attached to any Hollander Engine.

Results are guaranteed.

May we send you details?

BIRD MACHINE COMPANY

South Walpole

Massachusetts

Western Representative

111 Saverly Tr. 1718 Republic Bldg.
Chicago, Ill.

BIRD MACHINERY

GRAPHIC ARTS EXPOSITION IN BOSTON IS BIG SUCCESS

American Writing Paper Co. Has Largest Exhibit but Attractive Displays of Paper Also are Made by the Whitaker Paper Co., John Carter & Co., Arnold-Roberts Co., Carter, Rice & Co. and Others—Demand for Waste Paper Is Growing Extremely Active and Prices are Higher Than They Have Been in Some Time Past—Reports Good Success With Wills Nobroc Towels.

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 5.—The second Graphic Arts Exposition which closed Saturday night was the most complete of its kind ever attempted in this country and throughout the week attracted large crowds of people among whom were numbered many paper men, stationers and printers.

The exhibit of the American Writing Paper Company attracted the largest crowds of any single exhibit in the exposition.

The correct use of bond papers for business purposes was shown by the Whitaker Paper Company, one of Boston's three Eagle-A paper houses. The interesting and instructive booklet recently issued by the American Writing Paper Company was distributed by the Whitaker Company and by the John Carter & Co., of Atlantic avenue, and the Arnold-Roberts Company, the other Eagle-A paper houses in Boston. This little booklet called "Yardstick of Paper Values, No. 1," makes a valuable reference booklet. The booklet is also being distributed among the large banking and business houses of the country and shows the value of careful examination of papers used to find the correct grade for the particular use.

The John Carter & Co. had two exhibits at the Graphic Arts Exposition, one of its own and one in conjunction with the American Writing Paper Company. Included in its exhibits were book papers of the American Writing Paper Company and the various products of the leading mills which the John Carter Company represents. William C. Graham was in charge of the main exhibit.

Deckle D'Aigle Paper, manufactured by the American Writing Paper Company, was featured by the Arnold-Roberts Company. This paper, with four deckled edges, hand fashioned, has proved popular with the trade. The company's exhibit also included box stationery, Eagle-A announcement stationery and book-cover paper.

Joseph A. Borden of Chicago, America's dean of printing and past president of the United Typothetae of America, special representative of the American Writing Paper Company, told the visitors to the exposition all about the educational program which the company is now carrying on among printers and buyers of printing.

Other exhibits included that of the Boston Bank Note Company, of 77 Washington street, Boston, lithographed products, labels and stationery; the Brown Company, of Portland, Me., with samples of its kraft, fiber, bond, drug wrappings and spiral wound paper as carried by the Andrews Paper Company, of Boston, its local agent; and Carter, Rice & Co., of Devonshire street, who showed specimens of various papers which they handled and also distributed booklets and greeting cards.

Active Demand for Waste Paper

Boston dealers in waste paper report that prices are still advancing and many of them are offering higher prices today than they have offered for many years. The firms are now willing to send their trucks anywhere in Boston and suburbs and are offering 40 cents per hundred weight for waste paper, 50 cents for newspapers, and \$1.50 for magazines. Practically all of the houses report that they are unable to obtain sufficient quantities of waste

paper as the mills are buying all they can get hold of and paying good prices at the same time.

Nobroc Towels Being Well Received

The Andrews Paper Company, of 54 India street, distributor for the new Nobroc kraft towels made by the Brown Company, of Portland, Me., reports that they are being favorably received by the trade.

Gummed Tape Effects Great Economy

A unique comparative test of the relative economy of twine and gummed tape for wrapping packages in the retail stores of a great national shoe company has shown a saving of \$1,556 in the marketing of 500,000 pairs of shoes. The detailed figures follow:

Cost of twine for wrapping Regal Shoes, per lb.....	\$.75
Yards per pound—636 (average)	
Necessary to wrap one pair of shoes, 3 yds. (av.)	
One pound of twine will wrap 212 pairs of shoes at a cost of .....	.75
Cost, per pair .....	.003538
Cost, per 500,000 pairs	1769.00
Cost of sealing tape, 1¼ in. wide, per roll.....	.21¼
1 roll—500 feet	
Necessary to wrap one pair shoes, 1 foot	
1 roll will wrap 500 pairs at a cost of.....	.21¼
Cost, per pair .....	.000426
Cost of 500,000 pairs	213.00
Saving the first year	1556.00
This more than pays for the machines installed, viz:	.65

Want Lower Canal Rate to Kalamazoo

KALAMAZOO, Mich., September 5, 1922.—The Michigan Paper Mills Traffic Association has filed exceptions to the report just received from the Interstate Commerce Commission on the famous coal rate case, according to Clarence A. Bradford, secretary of the Association and vice-president of the Rex Paper Company, Kalamazoo.

This action on the part of the association will be taken through its legally constituted traffic representatives, F. A. Larrish and C. R. Hillyer, of Chicago.

The I. C. C. report was signed by Robert E. Quirk, chief examiner, and gives Kalamazoo a rate on coal from the West Virginia and Kentucky mines of \$3.00 a ton, against \$3.09, present rate, or a reduction of only nine cents.

"We do not consider this adjustment equitable," said Mr. Bradford. "We believe that Kalamazoo should have relief to the extent of 20 to 25 cents a ton at least, and will instruct our traffic representatives to work to that end."

To Resume Navigation on Fox River

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 5, 1922.—Navigation on the Fox river, halted almost three months ago when a flood washed out the locks at Little Rapids, will be resumed in a few weeks. The locks have been rebuilt but the canal bank still is to be filled in. The Little Rapids pulp mill, operated by the Combined Locks Paper Company, which was forced to close down when the flood washed out part of the dam, has resumed operations. Coal is beginning to arrive at the docks in Green Bay and there still is a possibility that considerable fuel will be transported by water before navigation closes for the winter.

Lockwood's Directory of the Paper and Allied Trades for 1923 will be issued shortly after October 1. By ordering now you will assure yourself of receiving an early copy.



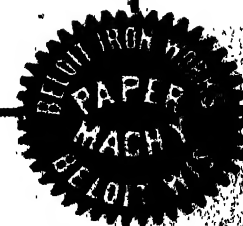
Record Performances

have been attained in
the past year on Beloit
Fourdrinier and Cylin-
der paper machines

Ask Us

BELOIT IRON WORKS

BELOIT, WISCONSIN, U. S. A.



MORE MILLS IN MIDDLE WEST DISCONTINUE QUOTATIONS

Conditions are Constantly Growing Worse and Many Mills, It Is Stated, May Have to Close Down by the Middle of the Month Because of Lack of Coal—Although Many Mills Have Stopped Quoting Prices There Has Been No Great Rise in the General Selling Price of Paper—Birmingham, Prosser, Little Co. to Open in Kansas City, Mo., on or About Sept. 15.

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, September 5, 1922.—Many more mills in the Middle West have stopped quoting prices and this is hindering sales to a very great extent. Mills announce that conditions are growing worse day by day and that the greater majority of the mills will close down by the middle of the month. Coal shortage is the big difficulty.

Though many mills have stopped quoting prices the salesmen report no great rise in the general selling price.

Enterprises need paper of every description and are willing to pay a good price but are holding out because of the delayed shipments. Their paper stock is decidedly lower than ever before and prevailing prices are not meeting with satisfaction.

Though sales were not considered very heavy for the past week there have been calls for all grades of paper. Wrapping papers of various grades led sales and the prices were considered as normal under all the circumstances.

Swigart Paper Co. Announces New Paper

Swigart Paper Company, 653 South Wells street, Chicago, announce another achievement in paper. The new "Swigart Superlative" is made from "virgin cotton." Manufactured from cotton instead of the variable waste of textile mills or the haphazard gatherings of the ragpicker, every sheet of the Swigart Superlative is uniformly a super-printing, super-folding enamel book. Only virgin cotton fibres of uniform length—unweakened by the drastic action of secondary processes—could possibly result in such a tough, strong, clear book paper.

An advertising campaign has been started on this new paper and sales have been reported to be finding large fields.

Birmingham, Prosser & Little Co. Formed

Birmingham & Prosser, 10 South LaSalle street, Chicago, announce the opening of a new office in Kansas City, Mo., that will be ready for business about September 15.

The new company will be known as the Birmingham, Little, Prosser Company, and will be located at 317-19 South West Boulevard.

R. B. Little, formerly with the Benedict Paper Company, Kansas City, Mo., and until recently vice-president of the Dwight Paper Company, 626 South Clark street, Chicago, will be taken into the new company and act as vice-president and general manager of the Kansas City office. The new concern will be affiliated with the Birmingham & Prosser office of Chicago, and will handle and sell a full line of all good grades of stock papers.

General News of the Trade

J. L. Forsythe, western representative of Atterbury Brothers, New York, and C. B. Forsythe, of the Forsythe Paper Company, are touring the Illinois and Indiana district and visiting different mills.

A. Hill, vice-president of the Croker-McElwain Company, Holyoke, Mass., visited several days with Chicago tradesmen. Mr. Hill reports that business is good but wishes the coal strike were settled.

F. McClellan, of the McClellan Paper Company, Minneapolis,

Minn., transacted several days' business in Chicago during the past week. Mr. McClellan is well known to the Chicago trade and visited amongst all his old friends.

S. Gerard, of the Diem-Wing Paper Company, Cincinnati, spent several days in Chicago transacting business with paper officials. Conditions in the East are not so upset but are being remedied with much hard work.

H. J. Keenan, of the Western Newspaper Union, passed through Chicago on a trip to visit eastern mills. Mr. Keenan expects to spend some time in the East and is also intending to visit mills in the Wisconsin district.

S. J. Hodgins, president of the Central Topeka Paper Company, Topeka, Kans., and family, are on a five weeks' automobile tour from Topeka to the White mountains and return. The trip will average about 6,000 miles. Mr. Hodgins and family visited several days in Chicago on their return trip.

Alex. Thomson, who has been on an extended vacation in Michigan, will return to Chicago about September 9. Mr. Thomson will return to the Champion Coated Paper Company awaiting a big season of business.

Colter Rule, formerly of the Whitaker Paper Company, has accepted a position with the Dwight Paper Company of Chicago.

Ray Hannahs, formerly with Dwight Brothers Paper Company, has accepted an offer of the Butler Paper Company and has commenced work for that concern.

W. E. Scott, formerly of the Whitaker Paper Company, Chicago, has taken charge of the Diem-Wing Paper Company's branch office in Chicago. The branch office is located at 111 West Washington street in the Conway building.

W. J. Herrmann, of the E. A. Bower Paper Company, Milwaukee, has returned from a ten days' business trip through the East. Mr. Herrmann spent considerable time in New York where he transacted business for his concern.

Geo. A. Matlock, sales manager of the Western Newspaper Union, Lincoln, Neb., spent several days in Chicago on business. Mr. Matlock announces that business is very good considering the present conditions.

Charles E. Schoff, vice-president and general manager of the San Antonio Paper Company, San Antonio, Tex., and the Paper Supply Company, Houston, Tex., transacted business in Chicago during the week of August 28.

The Allied Paper Stock Company, 626 West Taylor street, has incorporated with a capital of \$20,000. It will deal in waste paper and paper mill supplies. The incorporators were: A. E. Sandroff, Samuel Dry and Katherine Kelley. Correspondent, Pritzker & Pritzker, 903, 11 South LaSalle street, Chicago, Ill.

H. P. Hudson, New Westminster, B. C., Canada, visited in Chicago and transacted business in numerous wall paper lines.

Bird Co to Make Leo Shlick's Appliances

The Bird Machine Company, of South Walpole, Mass., builder of pulp and paper mill machinery, in particular of the Bird rotary screen, announces that it has made arrangements with Leo Shlick, consulting engineer, Boston, Mass., for the exclusive manufacture and sale of his various patented appliances for paper mills.

Leo Shlick's beaters, beater tubs, and beater hoods will be put on the market immediately by the Bird Machine Company, as all of these products are highly developed and refined. The beater hood is particularly interesting. It is a small and inexpensive attachment which will fit on to any Hollander beater. It is guaranteed to increase circulation at the same consistency or maintain circulation at a heavier consistency without using any more power.

Leo Shlick is well known as a paper maker and engineer. He has managed pulp and paper mills abroad, and for the last few years has been serving as a consulting engineer in this country and Canada.



CRANE VALVES, FITTINGS AND PIPING

Valves of established wearing qualities, fittings that insure tight joints, and steam specialties that operate accurately under the exacting requirements of service, strikingly define our facilities for meeting all the demands of modern steam practice.

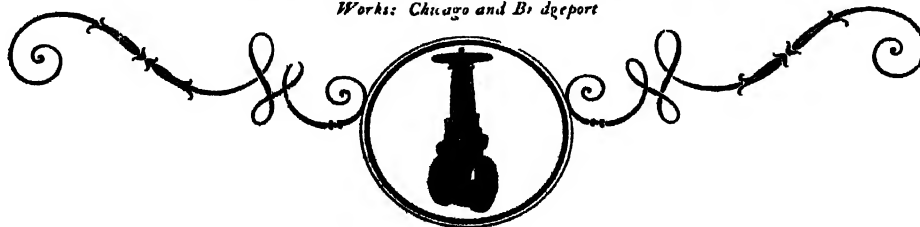
CRANE

GENERAL OFFICES CRANE BUILDING 836 S MICHIGAN AVE CHICAGO

Branches and Sales Offices in One Hundred and Thirty-five Cities

National Exhibit Rooms. Chicago, New York, Atlantic City

Works: Chicago and Bridgeport



TORONTO TRADE PROSPECTS ARE GRADUALLY IMPROVING

Owing to Unusual Conditions Some of the Mills Are Only Accepting Orders Now at the Price Prevailing at Time of Delivery—Representative Paper Firms Make Splendid Exhibits at Canadian National Exposition—Wax Paper Products Co., Ltd., Displays New Process of Impregnating Wax Paper—Satisfactory Reports Looked Forward to at Annual Meeting of Prominent Paper Firms.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 5, 1922.—Business in the paper line is picking up somewhat and the prospects for a good fall trade are reported to be brighter. The holding of the Canadian National Exhibition in Toronto, which annually attracts more than a million visitors from all parts of the Dominion including a large number from the United States, has brought in quite an influx of customers and most of the paper houses are holding "open shop" for out-of-town customers. Callers report that prospects are promising in their line. One of the incidents of the past few days has been the improvement in the coated paper trade. The printing trade is getting busier, bonds and writing show some improvement and toilet and tissue mills report a fair amount of business. Paper box plants report orders coming in more freely and there has gone into effect an advance of ten per cent on prices of all kinds of board. Some of the mills have been accepting business only at the price prevailing at time of delivery. The paper mills, which had supplies of soft coal for three weeks or a month ahead, are now feeling assured of quantities sufficient for fall requirements as considerable cargoes have been arriving during the past few days. Trade in wrapping papers is fair and kraft is moving as well as can be expected at this time of the year. There is a little better tone to the pulp market, with sulphite in stronger demand.

Paper Exhibits at the Canadian National Exhibition

Among the firms making attractive exhibits at the Canadian National Exhibition, Toronto, are the Interlake Tissue Mills Company, Toronto, which have a splendid display of toilet and tissues of all kinds, luncheon sets, paper towels, napkins, drug wrap, decorative crêpe rolls, fruit wrap, light weight kraft, etc. The Kinleith Paper Mills, St. Catharines, feature various kinds of writing papers, particularly Holland linen in various fancy papeteries. The Dennison Manufacturing Company, of Framingham, Mass., has a comprehensive display of decorative crêpe paper, tags, matstock, crêpe paper rope, etc. R. D. Kennedy, manager of the Canadian branch at 9 Wellington street East, Toronto, is in charge of the arrangements.

New Wax Paper Company Starts

Another new industry in the paper manufacturing line has been started in Toronto at 43 Britain street by the Wax Paper Products Company, Limited, of which C. E. Calvert is president and A. J. Dove, vice-president and general manager. The business office of the company has been removed from 79 Adelaide street to the new address. Instead of employing the usual process of coating the raw material with wax, a new process of impregnation is made use of and the outlook for the new concern is reported to be bright.

Spruce Falls Co. Completing Work

The Spruce Falls Company, of Neenah, Wis., which has spent a large amount of money in connection with its enterprises at Kapuskasing, Ont., has put its rossing plant in operation and expect to get all its wood out of the water and rossed before the winter sets in. Construction work on the balance of its plant has been resumed and the company expects to have its new sulphite mill in operation

before the end of the year. The plant will have a capacity of about one hundred and twenty tons a day. It is the intention at a later date to proceed with the erection of a large paper mill and do considerable work in the power development line. F. J. Sensenbrenner is the president of the Spruce Falls Company.

Many Changes Urged in Ontario

Dr. Judson Clark, the forestry expert, who has been looking into the administration of the Crown lands and woods department of the Ontario government, has sent in a report in which he recommends, with a view to improving the management of the forests of Ontario, that the department be placed under the direction of a duly qualified forest engineer. He has also recommended a new system in the measurement of the lumber content of logs condemning the present Doyle rule, which he contends is antiquated. He endorses a volume unit or cubic foot measurement and says that already a considerable proportion of the pulpwood of the province is being measured by cubic volume because of the greater convenience to all parties of this method of measurement.

Annual Meetings of Paper Companies

Several of the large paper companies are now getting ready for their annual meetings and it is expected that the reports presented on the operations of the past year will be very gratifying. The annual meeting of the shareholders of the Spanish River Pulp and Paper Mills, Limited, will be held in Toronto on September 28, while that of the Laurentide Company will be held in Montreal, September 19.

Interested in Pulp Wood Operations

P. Swanson, who won the first prize of five hundred dollars in the Practical Forestry essay competition conducted by Frank J. D. Barnjum, of Annapolis, Royal, N. S., and lives at Timmins, Ont., has long been interested in forestry and pulp wood problems. His last operation was in taking out three thousand cords of pulp wood for the Mattagami Pulp and Paper Company, of Smooth Rock Falls, Ont. Mr. Swanson is now on a prospecting trip throughout Northern Ontario in which he will size up the pulp wood possibilities for the coming season.

Notes and Jottings of the Industry

Alex Buntin, of Buntin, Reid Company, wholesale paper dealer, Toronto, is back after a pleasant holiday at Murray Bay, Que.

Among the callers on the Toronto paper trade during the past week were W. W. Murphy, of Winnipeg, representing Barber-Ellis, Limited; H. Wilson, of the Wilson Stationery Company, Winnipeg; A. G. McIntyre, president of Clarke Brothers, Limited, Bear River, N. S.; F. W. Snyder, of the Warren Manufacturing Company, New York City, and Frank Thorne, of Price Brothers & Co., Quebec City.

S. R. Armstrong, of Toronto, vice-president of the Mattagami Pulp and Paper Company, spent the past week at the company's sulphite pulp plant at Smooth Rock Falls, Ont. The mill is now operating pretty nearly to capacity.

Fred W. Halls, of the Fred W. Halls Paper Company, Toronto, and family, have been spending the past few weeks at their summer home at Sturgeon Lake, Ont.

S. F. Duncan, secretary-treasurer of the Provincial Paper Mills Company, Toronto, spent the past week on a business trip to Kalamazoo, Mich.

A recent guest at the regular weekly luncheon of the Toronto paper trade was George Allan of the John Martin Paper Company, Winnipeg, who has returned from a visit to Ireland. One of the features of the meeting was a discussion on the "long price list" which will go into effect in the trade in Toronto within the next few days.

The National Pad Company, 443 Kings street, West, Toronto, recently made an assignment. The liabilities are reported to be more than double the assets of the company.

Niagara Beaters Do Save Power

Cutting 43% in power consumption—that is the record made by one user of Niagara beaters. The figures produced below give full details. This paper-maker is producing as much with one Niagara as was formerly turned out in two Holland engines.

True—the one Niagara required a larger motor than either of the old beaters, but so great is the speed of Niagara that *the HP. hours used per ton of stock produced is materially less*. Other savings besides power alone result in the use of Niagara beaters and a better paper can be made. Let us send you full particulars.

Valley Iron Works Co.

Plant—Appleton, Wis.

New York Office—350 Madison Ave.



Here is the PROOF—

A Saving of 43 Percent

Furnish	Power Installed.
Ground Wood and	100 HP. for 1—2000 lb. Niagara beater
Bleached Sulphite for	150 HP. for 2—2000 lb. Holland beater
Book Papers.	

	2000 lbs. Niagara			2000 lbs. Holland		
Operation	Time in Hours	Power in HP	Con- sump- in HP. Hours	Time in Hours	Power in HP	Con- sump- in HP. Hours
Furnishing ..	1/4	60	15	5/12	40	17
Beating	1 1/2	100	20	7/12	70	41
Emptying .	1/20	80	4	1/4	45	11
Total	1 3/4		39	1 1/4		69
	39 HP hr. used per ton of Stock produced			69 HP. hr. used per ton of Stock produced		
Saving—	$\frac{69-39}{69} = 43\% \text{ Saving in Total Power Consumption}$					

PRODUCTION OF WOOD PULP DURING THE MONTH OF JULY

Statistics Just Issued by the Federal Trade Commission Indicate That Stock on Hand at the Mills at the End of the Month of Groundwood Equaled Forty-one Days' Average Output, New Grade Sulphite Nine Days' Average Output, Bleached Sulphite Eight Days' Average Output, Easy Bleaching Sulphite Five Days' Average Output, and Mitscherlich Sulphite Six Days' Average Output.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 30, 1922.—In connection with the Federal Trade Commission's current statistics of the paper industry, a summary of the monthly reports from manufacturers of wood pulp, and other kinds of pulp used in paper making, is submitted for the month of July, 1922. The table shows the kind of pulp, the stocks, production, pulp used and shipments for the month. The pulp shipped during each month represents only pulp shipped to a concern different from the one producing it. Loss of production is shown by giving the idle machine time reported by each company for each kind of pulp.

Pulp Production

The following is a tabulation of the production, pulp used by the company producing it, shipments to outside concerns, and stocks of finished pulp in tons of 2,000 pounds on an air-dry basis, for July, 1922, compared with July, 1921, for the operating mills. The average production is based upon the reports covering the years 1917 to 1921, inclusive, and the average stocks are based upon the stocks carried for the years 1919, 1920 and 1921.

Grade	Number of Mills	On hand first of month Net tons	Production for month Net tons	Used during month Net tons	Shipped during month Net tons	On hand end of month Net tons
Ground Wood Pulp:						
July, 1922.....	159	192,736	124,691	121,069	8,778	187,580
July, 1921.....	172	216,069	75,405	88,902	6,484	196,088
July, 1920.....	169	151,340	123,340	124,371	12,859	137,440
July, 1919.....	158	200,688	98,759	108,189	6,930	184,328
Average.....			115,150			147,073
Sulphite, News Grade:						
July, 1922.....	60	21,461	55,629	50,855	5,439	20,796
July, 1921.....	67	22,755	42,572	35,693	8,245	21,389
July, 1920.....	64	14,470	70,563	57,852	13,019	14,162
July, 1919.....	63	26,133	59,927	53,220	9,091	23,749
Average.....			60,125			20,685

Grade	Number of Mills	On hand first of month Net tons	Production for month Net tons	Used during month Net tons	Shipped during month Net tons	On hand end of month Net tons
Sulphite, Bleached:						
July, 1922.....	33	11,224	36,400	23,774	11,404	12,446
July, 1921.....	34	16,468	21,919	14,470	9,983	13,934
July, 1920.....	32	5,286	49,637	26,366	24,749	3,808
July, 1919.....	30	16,710	43,312	22,868	21,170	15,984
Average.....			39,800			9,507
Sulphite, Easy Bleaching:						
July, 1922.....	12	11,292	4,698	3,869	903	1,218
July, 1921.....	10	674	4,587	2,905	1,775	581
July, 1920.....	7	569	6,370	3,428	2,836	675
July, 1919.....	8	2,479	5,480	3,016	2,852	2,091
Average.....			6,000			1,346
Sulphite, Mitscherlich:						
July, 1922.....	7	1,972	5,964	5,758	711	1,467
July, 1921.....	7	2,375	5,084	3,004	2,006	2,449
July, 1920.....	7	1,302	7,196	4,104	3,252	1,142
July, 1919.....	7	993	6,430	3,742	2,438	1,244
Average.....			6,125			1,831
Sulphate Pulp:						
July, 1922.....	22	7,924	20,627	14,528	6,549	7,747
July, 1921.....	21	6,884	11,836	9,226	3,294	6,200
July, 1920.....	21	4,151	18,514	12,519	6,898	2,248
July, 1919.....	22	7,852	13,884	10,005	4,790	6,941
Average.....			13,050			6,499
Soda Pulp:						
July, 1922.....	28	9,298	30,424	17,749	14,119	7,854
July, 1921.....	28	10,175	16,339	11,190	5,344	9,980
July, 1920.....	27	4,567	36,005	19,539	17,295	3,738
July, 1919.....	29	8,078	32,049	18,385	14,885	7,757
Average.....			29,800			6,951
Other than Wood Pulp:						
July, 1922.....	5	165	895	571	84	385
July, 1921.....	5	159	431	388	50	152
July, 1920.....	5	26	719	546	90	109
July, 1919.....	6	146	844	547	65	378
Average.....			800			154
TOTAL—All Grades:						
July, 1922.....		246,072	279,308	238,173	47,987	239,220
July, 1921.....		275,559	178,173	165,778	37,181	250,773
July, 1920.....		180,711	312,334	248,725	80,998	163,322
July, 1919.....		263,980	280,685	219,972	62,221	242,472
Average.....			270,850			194,026

Total stocks of all grades of pulp in the mills on July 31 amounted to 239,220 tons. Mill stocks of all grades excepting bleached sulphite and "other grades" decreased during the month.

Ratio of Stocks to Average Production

Comparing the stocks on hand at the domestic pulp mills at the end of the month with their average daily production based on the reports covering the years 1917-1921, inclusive, the figures show that:

Ground wood pulp stocks equal 41 day's average output.

News grade sulphite mill stocks equal 9 days' average output.

Bleached sulphite mill stocks equal 8 days' average output.

(Continued on page 34)

Loss of Production

MONTH OF JULY, 1922 (WITH JULY, 1921, FOR COMPARISON)

Grade	Lack of Orders 1922	1921	Repairs 1922	1921	Other Reasons 1922	1921	Total 1922	1921
Ground Wood Pulp:								
Number of grinders.....	40	100	159	123	595	475	794	697
Total hours idle.....	15,570	27,524	12,364	21,861	117,850*	133,356	145,784	182,741
Sulphite, News Grade:								
Number of digesters.....	13	42	16	14	31	36	60	92
Total hours idle.....	3,344	8,355	1,895	4,405	3,244	8,127	8,483	20,887
Sulphite, Bleached:								
Number of digesters.....	38	51	31	18	26	16	95	85
Total hours idle.....	4,290	10,441	1,722	3,137	1,519	2,470	7,531	16,078
Sulphite, Easy Bleaching:								
Number of digesters.....	0	3	0	0	0	5	0	8
Total hours idle.....	0	1,281	0	0	0	220	0	1,501
Sulphite, Mitscherlich:								
Number of digesters.....	0	4	0	8	0	4	0	16
Total hours idle.....	0	251	0	341	0	40	0	632
Sulphate Pulp:								
Number of digesters.....	1	25	11	1	20	1	32	27
Total hours idle.....	49	3,486	910	96	1,602	66	2,561	3,648
Soda Pulp:								
Number of digesters.....	39	146	8	7	44	8	91	161
Total hours idle.....	4,154	48,585	710	2,958	1,631	2,416	6,495	53,959
Other Grades:								
Number of digesters.....	0	4	0	0	4	0	4	4
Total hours idle.....	0	983	0	0	934	0	934	983
TOTAL number of machines.....	131	375	225	168	720	545	1,076	1,088
TOTAL hours idle.....	27,407	100,928	17,601	32,798	126,780	146,703	171,788	280,429

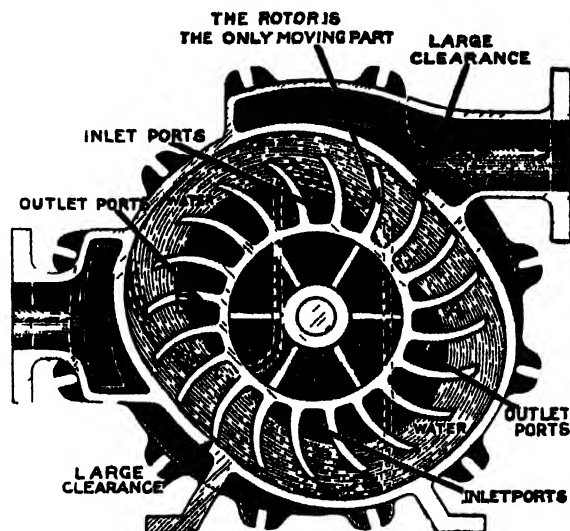
*Includes 64,044 hours due to water and power conditions.

THE HYTOR VACUUM PUMP FOR FLAT BOX SERVICE

Vacuum
Produced
Absolutely
Without
Pulsation

—
No Vibration

—
Saves Wires



Only One
Moving Part

—
No Rods, Pistons,
Crank Shafts
Loose Moving Parts
and No Gears

—
No Expert Attendance

Western Representative
T. H. SAVERY, Jr.
1718 Republic Bldg.,
Chicago, Ill.

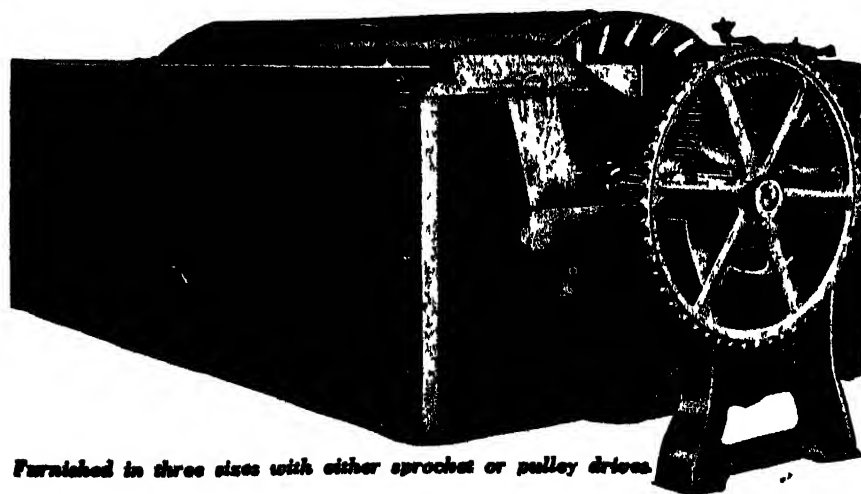
THE NASH ENGINEERING CO.
WILSON POINT ROAD
SOUTH NORWALK, CONN.

New England Representative
G. H. GLEASON
185 Devonshire Street
Boston, Mass.

THE WOOD'S MACHINE

Distinctive performance and intensified confidence in this machine as a Pulp Thickener, Save-All, Washer or Water Filter insure success in its building.

On the market but a few years, our installations number more than Eighty-five. Twenty-nine sold the past year.



Furnished in three sizes with either sprocket or pulley drives.

MADE BY
GLENS FALLS MACHINE WORKS
GLENS FALLS, N. Y.

Try our Split Cams for your Flat Screens

SIMPLICITY, in cylinder and vat construction, operation automatic, and without couch roll, doctor or any complicated moving parts.

DEPENDABILITY, in its simple revolving cylinder only, with nothing to get out of order, requiring little attention, and having a patented principle of maintaining wires always clean, insuring continuous performance.

PRODUCTIVENESS, enormous, through clean wires, large screening surface, patented unique method of discharge and freedom from shut-downs.

DURABILITY, by rigid construction, ample bearing surfaces, nothing to injure wires and highest grade materials.

All these enhance its value and involve upon you the duty of investigation.

Obituary

Charles E. Pope

HOLYOKE, Mass., September 5, 1922.—Charles Elmer Pope, founder of the Japanese Tissue Mills, died on Tuesday, August 29 at Millinocket, Me., in his sixty-eighth year. Mr. Pope was born in Spring Lawn, Pa., April 29, 1855, and in the spring of 1861 the family moved to Middletown, O., where he started his paper-making career with the Wardlow Thomas Paper Company. In 1869 the family moved to Milton, Mo., and for one and one-half years he was mail and express carrier operating the "Pony Express" between Milton and Corning, Mo. At this time this part of Missouri was a frontier. The Indians were often seen in crossing these prairies. In 1875 he was connected with the Tytus Paper Company at Middletown, O. From there he went East, being connected with paper mills in Connecticut and Massachusetts. In 1887 he was married at Eau Claire, Wis.

Returning to Holyoke, Mass., in 1900, through his efforts the Japanese Tissue Mills were organized. He also started the Pope Paper Company in Holyoke, and afterwards returned to the Japanese Tissue Mills as consulting engineer, where he remained for ten years. It was here his genius for increasing the productive power of paper mill machinery showed brightest. Invention after invention was added to his already long list, each design to increase the speed and improve the quality of paper mill products. It was not long before the Japanese Tissue Mills acquired the enviable position they still hold.

When Mr. Pope left Holyoke it was to become consulting engineer for the Great Northern Paper Company, and in this great field of news print production he soon made his mark. The so-called Pope process which is now installed in all the Great Northern Mills is the last word in news print production. It has made possible the doubling and trebling of the output of single news print machines by eliminating the time lost by breakage and making increase of machine speed possible. The Pope process involves a dozen or more mechanical improvements in paper mill machinery. At one time in his varied career Mr. Pope was connected with the Rice-Barton & Fales Company, makers of paper mill machinery at Worcester, Mass. He also had charge of the paper mill exhibit at the World's Fair in Chicago in 1893. Altogether, his was an eventful life, and the high esteem in which Mr. Pope was held is reflected in the general regret expressed at the news of his death. Besides his widow, he is survived by three sons, Thomas of the Belgo Paper Company, Shawinigan Falls, Quebec; Elmer and Ernest, twins, seniors at Dartmouth College; two daughters, Adelaide at Springfield, Mass., and Mrs. George Burkhardt of Holyoke, Mass., and one brother, E. J. Pope in Michigan, also one sister in Kansas.

William L. Hedenberg

William L. Hedenberg, senior partner of S. M. Gladwin & Co., paper dealers, of 82 Duane street, New York, died of heart disease Wednesday in his home in Red Bank, N. J.

Mr. Hedenberg was born in New York fifty-two years ago. He was graduated from Princeton University in 1891, having been active in college athletics, particularly baseball and wrestling. His first work after graduation was with the Central Railroad Company of New Jersey as a civil engineer. In 1907 he became editor of the technical magazine, *Electricity*, remaining in that position until 1912. He was a member of the Princeton Club and formerly of the New York Athletic Club. Previous to the war he was commodore of the Red Bank Yacht Club.

Mr. Hedenberg leaves his widow, Mrs. Frances Van Cott Hedenberg, and a daughter, Mrs. Jesse M. Sabath, of Hubbard Park. Burial was in Woodlawn Cemetery.

Engineers

By B. T. MCBAIN, NEKOOSA EDWARDS PAPER CO., PORT EDWARDS, WISCONSIN

A man came into our employment office the other day and registered for employment. He said he was a "beater room engineer." We had no place of that class for him, but could have given him other employment, but he preferred only to work at his trade. We took his address and promised him a chance the first opening. As is the wont of the employment manager the references were looked into and his previous employer asked as to this man's qualifications.

The reply said he had never worked for them as a beater engineer, but a continuance of the matter, through correspondence, disclosed that this man had tended the steam engine that had run the entire machinery of the beater room and he had been known in the mill as one of the beater room engineers. The man had told the truth, but had the correspondence been dropped after the first letter he might have been a marked man for having misinterpreted his calling.

So it goes in many other departments of large plants.

In our plant the loading crane for loading logs and other heavy material is known as a jammer. Where this job or machine got this name, I cannot say, but on going to other plants the man who is a jammer engineer with us is a crane man, or a loader, or some such designated workman. If Tom Jones goes from Nekoosa to another mill, possibly only 25 miles distant, or writes for employment, his language possibly would not be understood, though he might be a desirable workman much needed at that particular time.

Would it not be well for the mills to work together in this respect and not only eventually help themselves, but at the same time help the workmen who may be in their employ?

Nowadays, everyone is an engineer!

WOOD PULP PRODUCTION FOR JULY

(Continued from page 32)

Easy bleaching sulphite mill stocks equal 5 days' average output.
Mitscherlich sulphite mill stocks equal 6 days' average output.
Sulphate mill stocks equal 14 days' average output.
Soda pulp mill stocks equal 7 days' average output.
Mill stocks of "other than wood pulp" equal 12 days' average output.

Total mill stocks of all grades equal 22 days' average output.

Loss of Production

The idle machine time of grinders and digesters reported to the Commission for the month of July, 1922, is shown in the attached tabulation. The number of grinders and digesters include only those for which idle time was reported during the month. The total number of machines may include duplications, because the report may count the same machine twice if idle for different reasons during the different parts of the month. The reasons tabulated for lost time are "lack of orders" and "repairs." "Other reasons" include water conditions, etc. The lost time in July, 1921, is shown by grades and reasons for purposes of comparison. Neither the number of machines nor hours idle include idle machines and the time lost in 13 mills not in operation during the month.

Calling on New York Paper and Pulp Mills

CLEVELAND, Ohio, September 5, 1922.—A. J. Bjeler, one of the sales engineers of the Hill Clutch Company is calling on all the paper and pulp mills in New York State.

Mr. Bieler is demonstrating to the purchasing, engineering, and operating departments the merits of the new Cleveland Type Hill Collar Oiling bearing by means of an aluminum model. Everywhere the Cleveland Type Hill Collar Oiling bearing is being enthusiastically received as it is especially well suited for the service encountered in the pulp and paper mill industry.

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

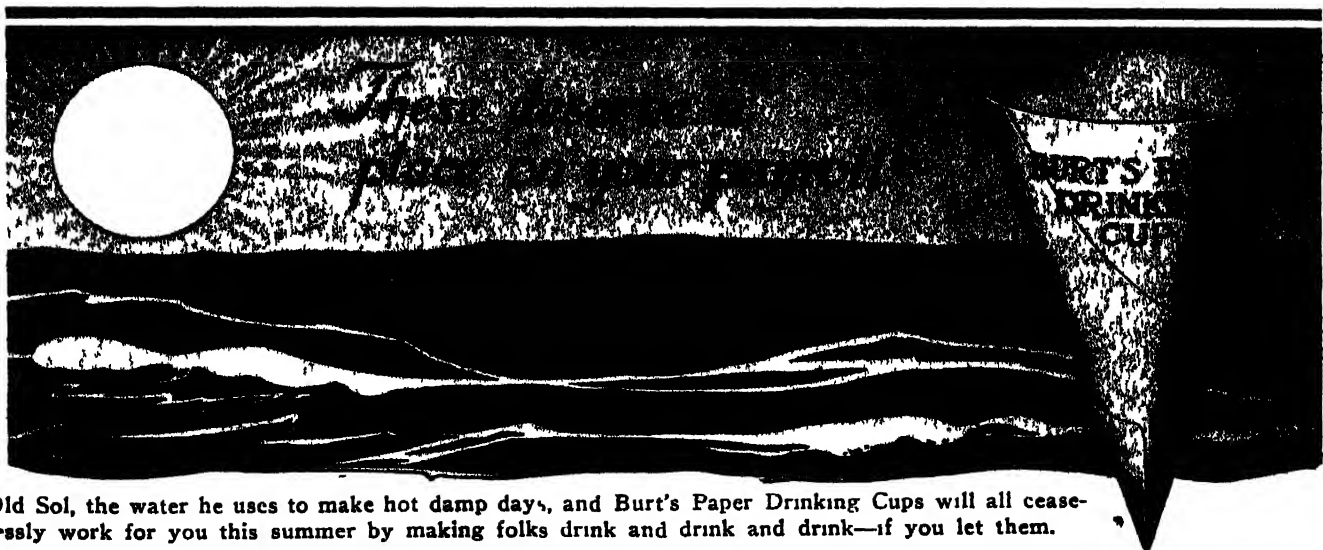
**Very Low
Power
and
Upkeep Expense**



**Delivers
Rejections Free
from Good
Stock**

ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING
WRITE FOR FULL DETAILS **CORRESPONDENCE A PLEASURE**

IMPROVED PAPER MACHINERY CO. Nashua, N. H.
SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA



Old Sol, the water he uses to make hot damp days, and Burt's Paper Drinking Cups will all ceaselessly work for you this summer by making folks drink and drink and drink—if you let them.

Burt's Paper Drinking Cups For Particular People

**Snow white of fine paper.
No wax to make drink taste.
No bottom to fall out.
Nor to set aside on.
No animal glue used.**

**One-at-a-time dustproof dispenser.
Of ample capacity.
No opening up and soiling.
Drinking edge untouched by hands
before use.**

**Treble reinforced to make holders
unnecessary.
Lowest in cost.
Holds hot drinks.**

You can sell such cups to particular people who stay sold and repeatedly come back for more—at a good profit to you.

F. N. BURT COMPANY, Ltd., Paper Cup Division, Buffalo, N. Y.

New York Trade Jottings

C. P. Robinson, of the Borregaard Company, 200 Fifth avenue, was in Boston last week, visiting the trade.

* * *

E. W. Scarborough Company, Inc., of 28 Beekman street, New York, has changed its name to Boyd and Brainard, Inc.

* * *

The A. G. Nelson Paper Company is now leading in the Industrial Paper Baseball League of New York, with Lasher and Lathrop running a close second.

* * *

C. H. Carstensen, formerly assistant purchasing agent of the Robert Gair Company, 350 Madison avenue, has joined the sales force of the Valley Schuyler Paper Company, with offices in the Borden Building.

* * *

Sydney T. Jones and John D. Binley, of the Hudson Valley Paper Company, and Eugene J. Cooper, of the company's New York office, represented the company at the annual Hammermill sales meeting.

* * *

H. N. Scofield, who formerly represented Coy, Hunt & Co., has acquired an interest in the Strang Paper Company, 55 Barclay street, New York. This house specializes in bond, ledger, writings and book papers.

* * *

K. S. Warner, of the John F. Sarle Company, Inc., 85-87 John street, New York, has recently adopted an unique advertising scheme. His idea consists of a series of golf cartoons, accompanying calendar cards, the ensemble being used to advertise paper.

* * *

J. F. Cella, sales manager of Strehl-Otens of 200 Fifth avenue, was married Wednesday to Miss Ada McCartney in Brooklyn. The couple will spend their honeymoon in New England, and will reside in Brooklyn at 576 Ocean Parkway upon their return to New York.

* * *

Street & Smith, New York book publishers, of 79-89 Seventh avenue, have awarded the contract for constructing a nine-story warehouse at 147 West 15th street, New York. The plans call for a building of brick and fireproof construction, 60x100, to cost approximately \$150,000.

* * *

J. Galewita, of the Great Atlantic Paper Company, 149-153 Wooster street, New York City, is able to make immediate shipments to paper merchants from the stocks on hand. These stocks include fifty cars of printing and wrapping papers, consisting of number one kraft, XXX manila, railroad writing, bonds and news print paper in standard sizes and weights.

* * *

The American Paper and Pulp Association, 18 East 41st street, New York, has just issued a bulletin, under date of September 1, refuting the statements of Senator Ladd in his support of a 4-cent duty on casein. Accompanying this bulletin, a four-page open letter by Charles F. Shirley, representing the United Typothetae of America, is dedicated to the same purpose.

* * *

The Wall Street Journal in its issue of Wednesday said: "International Paper common made a new high for the year, selling above 90. As general trade situation improves, floating supply of the stock is becoming scarcer. Out of the 198,503 shares outstanding, the Chase interests, which at one time opposed the present management, showed that they held 115,000 shares. This block it is understood is still intact. Chase last year was elected to the board and is now working in harmony with the management."

The Stone Brothers & Sherwin Company of New York and the establishments of Victor Galaup of Paris, France, announce the incorporation of Stone Brothers & Victor Galaup Company, Inc., for the purpose of importing and exporting new and old paper makers' supplies. This company will handle exclusively the well-known product of Victor Galaup. Both interests in this company have been favorably known in their respective markets for more than fifty years and their consolidation insures the trade satisfaction in every regard. The new company will be under the management of Isadore P. Klous.

* * *

The Vacuum Oil Company, 61 Broadway, New York, has recently issued an interesting publication on "Pulp and Paper Mill Lubrication." This book has been a long time in the making. Considerable research work is represented in the information presented within its covers. It is authoritative. It is not a Vacuum Oil Company effort only but represents the combined knowledge of representative manufacturers of pulp and paper mill machinery and internationally known pulp and paper makers who were brought into consultation, of lubrication engineers who have specialized in this industry, and of the Vacuum Oil Company's Technical Department, whose authority on machinery, oils and their application, is internationally known. Copies may be obtained by any person associated with pulp and paper mills by addressing the New York office of the Vacuum Oil Company.

Capital City Salesmen Visit Paper Mills

[FROM OUR REGULAR CORRESPONDENT]

SPRINGFIELD, Ill., September 5, 1922.—The Capital City Paper Company, of 812-14 East Adams street, recently ended the novel vacation-trip afforded its salesmen when a 10-day auto trip was made through Illinois and Wisconsin. This trip was not only a vacation but served as a practical schooling in paper making for the company's salesmen in Wisconsin during the visits to the following mills: Nekoosa-Edwards Paper Company, at Nekoosa and Port Edwards; Wausau Sulphate Fibre Company, Mosinee, Wis.; Victory Bag and Paper Company, Marinette, Wis., and the Northern Paper Mills, Green Bay, Wis.

Reeves Variable Speed Transmission

The Reeves Pulley Company, of Columbus, Ind., has recently issued an "Engineer's Manual" pertaining to The Reeves Variable Speed Transmission. This booklet lists the complete line of variable speed transmissions and sets forth the various use of this machine as well as mechanical data pertaining to it.

This company has also distributed with its jobbers a new catalog, P-33, describing and illustrating The Reeves Wood Split Pulley. Copies of either of these publications will be sent upon request.

Goes With Birmingham, Little & Prosser Co.

KANSAS CITY, Mo., September 5, 1922.—Roger B. Little, vice-president of the Dwight Brothers Paper Company, has resigned, his connections taking effect September 2. In the future he will be with Birmingham & Prosser in full charge of their Kansas City warehouse, under the firm name of Birmingham, Little & Prosser Company. They will be located at 317-319 South West boulevard, where they will carry a full stock of printing papers. Mr. Little has been with the Dwight Paper Company about five years and is well known in the paper field, and should have a large future in his new undertaking.

Geo. M. McKee to Manage Riordon Co.

MONTREAL, Que., September 5, 1922.—George M. McKee is going to take full charge of the affairs of the Riordon Company, Ltd., which has been in trouble for the last eighteen months. He has been manager of the Donnacona Paper Company, Ltd., for some years past.

**GROUND WOOD
CHEMICAL PULPS**

PERKINS-GOODWIN CO.
NEW YORK

PAPER

We announce our appointment
as selling agents for

Sundsvalls Cellulosa Aktiebolag

SUNDSVALL, SWEDEN

PRIME EASY BLEACHING	SULPHITE	"ESSVIK"
HALF PRIME EASY BLEACHING	"	"S"
PRIME STRONG UNBLEACHED	"	"BLACK STAR"
HALF PRIME UNBLEACHED	"	"ST"

Yearly Production 30,000 Tons

Samples and Quotations on request

NILSEN, LYON & CO., Inc.

140 NASSAU STREET

NEW YORK



SUPER CALENDER ROLLS

The final touch is given your paper stock by the Calender Rolls. For half a century our rolls have been putting that finishing touch upon papers that have an acknowledged superiority.

THE APPLETON MACHINE COMPANY

APPLETON WISCONSIN

"AMERICAN"

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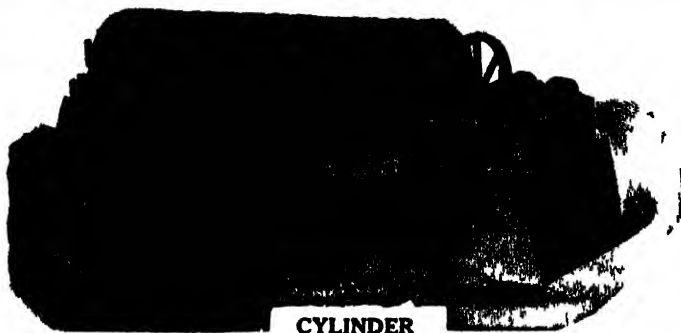
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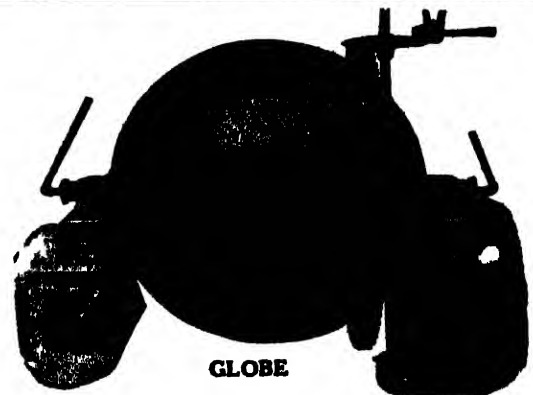
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THE BIGGS BOILER WORKS COMPANY

Established 1887

Akron, Ohio

Editorial

Vol. LXXV New York, September 7, 1922 No. 10

FIFTY-FIRST YEAR

The Problem of Congress

To devise a tariff measure that will prove a "cure-all" for all evils—that will bring wealth and happiness, if not health, to every industry and to every individual in a nation as vast and of as many diversified elements as our own, is indeed a delicate task. Unfortunately all protective tariff sauces must be fed to geese and ganders alike if their ultimate aims are ever to become realities. It does not appear as though Congress would ever be able to differentiate between various phases of a single industry. If an industry is a gander, it must receive the accepted gander protection. If an industry is a goose that is laying golden eggs then the protective tariff must be employed to enable that goose to turn out platinum eggs—perhaps diamond-studded ones.

It is a well recognized fact that the nation as a whole needs a protective tariff. It is equally well known that the American paper industry as a whole is in need of a tariff. And it is just as well known that the industry has no more use for a tariff on casein than has a giraffe for a sore throat. It was intimated to Congress that a tariff on imported pulp and paper, produced by cheap labor and dumped into our markets in wholesale quantities, might help solve one of the economic problems in the home industry, give employment to more Americans and generally help things along. "All right," said Congress without any hesitation, "we'll tax imported casein four cents a pound."

Senator Ladd, in upholding the proposed duty on this commodity, stated that the foreign producer of casein had an advantage over the domestic manufacturer and that this amounted to \$1.15 per hundred pounds. The tariff hearings on this subject further stated:

"We cannot compete with the Argentine casein, which usually is of the poorest quality and which has been sold in New York as low as 6½ cents per pound."

Charles F. Shirley, representing the United Typothetæ of America, points out the economic unsoundness of levying such a duty and refutes the statement of Senator Ladd:

"A duty of 4 cents a pound on casein would entail a loss of many millions of dollars in the printing and allied industries and would affect the welfare of many millions whose business would suffer or whose employment would be endangered by the increased cost of coated paper.

"Senator Ladd's statement before the Senate Committee was based largely on misinformation and misunderstanding, as careful investigation of the facts proves.

"French casein is of a superior quality and always commands a premium, and for the past ten years Argentine casein has sold for a higher price than the American. The American coated paper manufacturers use 90 per cent of all casein sold in this country, foreign and domestic, and would not pay a premium except for better quality.

"Although a lifelong and consistent protectionist, I oppose a duty on casein because a duty however large will not establish an industry, nor is it needed to foster a by-product. On the other hand, a duty on casein would prove a direct tax on every buyer of printing and all employed in that large industry."

As Mr. Shirley outlines in another part of his statement, the fundamental principle back of all tariff must always be protection of high priced American labor from competition with cheap foreign labor. A tariff on casein would not protect any American labor either on the farm or in any industry.

"However," he continues, "the printers who use casein coated paper are numbered by thousands, and the number of manufacturers and users of printed matter runs into millions of customers who would be compelled to pay more for their printing, and the increase in price would be a distinct injury without American labor being benefited."

An individual, a company, or even an entire industry is not necessarily breaking faith with its political convictions when it objects to the passage of a bill that is economically unsound. There is always the breaking point where politics ends and common sense begins. This point has been reached in the proposed tariff on casein.

As opposed to the utter uselessness of a high duty on this imported product, there are many striking examples, not only in the paper industry but in every conceivable line of business, where a heavy ad valorem duty serves its full purpose in protecting the American laborer, and, ultimately, the American consumer. Import merchants are naturally anxious to continue their protracted era of profiteering unhampered by any protective legislation. Through the medium of the press they have attempted to bulldoze the public into believing that the ultimate consumer would be the inevitable butt of the tariff joke.

The American market is just beginning to be flooded with cheap foreign manufactures. Protection for American industries in the form of an intelligent tariff is the only method of insuring their prosperity during this period of economic readjustment the world over. America needs its paper industry and, above all, American paper workmen must have employment.

The problem of Congress is a hazardous one, for countless thousands of American citizens will be affected by its decisions. It will come to realize the peculiar nature of the paper industry's needs as far as protection is concerned and will realize that "what is sauce for the goose" is not always sauce for the gander when the nation's welfare is at stake.

Foreign Paper Prices

The monthly average import price of news print continues to show a slight upward tendency according to figures for June just issued by the Department of Foreign Commerce at Washington. The price per pound for the month was .0349 cents as compared with .0347 cents for May and .0342 cents for April. The price for June of last year was .0533 cents. Prices, however, showed a sharp decline in July, 1921, when the price per pound was .0491 cents and reached the low level of .035 cents in May since when they have been gradually again increasing.

The monthly average import price of pulpwood also is showing

an increasing tendency, the price per cord for June being \$10.35 as compared with \$10.28 for May and \$14.67 for June of last year.

The monthly average import price of groundwood also showed a perceptible increase, the price given for the month being \$28.18 as compared with \$26.86 for May and \$30.16 for June of last year.

The monthly average import price per ton of unbleached chemical pulp for June was \$51.20 as compared with \$57.17 for May and \$76.36 for June of last year.

The monthly average import price per ton of bleached chemical pulp for June was \$88.10 as compared with \$85.47 for May and \$124.70 for June of last year.

The monthly average export price of news print per pound for June was .045 cents per pound as compared with .048 cents for May and .061 cents for June of last year.

The monthly average export price per ton of wood pulp for June was \$43.37 as compared with \$55.64 for May and \$58.58 for June of last year.

Conditions in Austrian Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 5, 1922.—American Consul Foster at Vienna has the following to say in a report to the Department of Commerce on the Austrian paper industry:

Paper is one of the most important exporting industries in Austria, as wood is abundant in this Republic. Of the former Austro-Hungarian paper industry, 60 per cent has remained to the Republic, 20 per cent was taken over by Czechoslovakia, and 10 per cent went to Yugoslavia. The industry, however, is still controlled from Vienna, and a lively exchange of semi-manufactures is carried on between Austrian and Czechoslovak factories. In 1921 about 50,000 quintals of wood pulp were forwarded to Czechoslovakia in return for 100,000 quintals of cellulose, which were required by the Austrian mills. When working at full capacity it is estimated that the annual output of the three countries will reach 1,600,000 metric quintals of paper, 1,680,000 quintals of wood pulp and cardboard, and 1,200,000 quintals of cellulose (One quintal equals 220 46 pounds.)

During 1921 the Austrian paper industry worked at only about 65 per cent capacity, one of the chief obstacles in the way of full production having been scarcity of coal. While most of the factories are run by water power, coal is required for certain processes, such as drying, and the serious shortage experienced during 1920 and 1921 greatly handicapped the paper industry.

Austrian exports of paper products during 1921 amounted to about one-third of the total output. The principal countries of destination, in order of quantities, were: Hungary, Italy, Poland, Yugoslavia, Czechoslovakia, and Germany, but Austrian paper was sold also to the Balkans, Egypt, Persia, and the United States, declared exports to the latter country having been valued at \$207,377.

Dr. Kress to Go With Thilmany Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 5, 1922.—Dr. Otto Kress, noted paper expert, technical director for the Consolidated Water Power and Paper Company of Wisconsin Rapids, will join the Thilmany Pulp and Paper Company, Kaukauna, after September 15, as its technical director. Dr. Kress will live in Appleton.

Dr. Kress joined the Consolidated organization about a year and a half ago, resigning from the Forest Products laboratory in Madison. He is regarded as one of the foremost paper experts in the country.

Dr. Kress was associated with the Thilmany company about 15 years ago.

An Experiment in Paper Pricing

EDITOR PAPER TRADE JOURNAL:

"As you are no doubt aware, the paper merchants throughout the country have been discussing for the last several months the necessity for changing the present method of paper pricing. Up to date, no solution has been arrived at that would satisfy all concerned.

"The price-list which we send you contains a method which appears to the writer to be better than any which have been advanced. It is fair to the merchant and the printer alike. The merchant secures the proper margin of profit on his small business, and the printer can buy in wholesale quantities at a very low price.

"We are receiving a variety of comments from all over the country. One paper merchant stated in his letter that while the plan did not appeal to him, he was open to argument, and if it proved correct, he would follow. Another paper merchant advised that it was absolutely wrong, and that we would very shortly become aware of that fact. Still another one intends to join us in trying to put it across over the whole country.

"We believe this is an experiment that might interest mill men, paper merchants and the printers throughout the country.

"Yours very truly,

"THE B. F. BOND PAPER COMPANY,
B. F. BOND, President."

The new method which is referred to by Mr. Bond in his communication and which is printed in the new catalogue of the company is as follows:—

"The paper merchants throughout the country, in analyzing their costs, have found that each order costs a certain base amount to execute. Therefore, on the large orders the percentage of cost is materially reduced.

"We have therefore arranged a number of items in this list to allow liberal discounts on quantity orders and on quantity purchases our customers can assort their purchases among the various items they need and secure these liberal discounts.

"This is a new method, and several of our customers with whom we have discussed the plan believe they would like it. We would like to have an expression of your opinion. If we find this method meets with favor, it will be continued.

"All assorted orders take Quantity prices, i. e., in ordering 2,000 pounds you may divide your order by buying bonds, cardboards, envelopes, etc., and if your order consists of only one package (not broken) or more of each item, they each will take the 2,000-pound price of that particular item.

"Exceptions. Mill brands where resale prices are suggested by the mill will only be sold in conformity with suggested mill prices.

"Additional prices for colors or special finishes added to net prices after discount is deducted.

"We charge 25 per cent additional to ream prices for all broken packages."

Great Northern to Build Paper House

MADISON, Me., September 5, 1922.—It is rumored that a greater part of the proposed improvements on the canal by the Great Northern Paper Company in this town have been called off. Instead of the improvements on the canal the company now contemplates the establishment of a power plant on the Anson side of the river on land which it owns a few rods below the bridge. Water wheels will be installed and power transmitted by electricity to the Madison mill.

Certificate Bond Conference Sept. 25-26

HOLYOKE, Mass., September 5, 1922.—The Crocker-McClellan Co. is arranging for a conference of the distribution of Certificate Bonds to be held Monday and Tuesday, September 25 and 26, at Holyoke. An interesting meeting is expected.

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Ryan-Seaman Process

DRY SATIN WHITE

The Latest Development in The Coated Paper Industry

Casein
Crystal Boro Phosphate
(A solvent for casein)

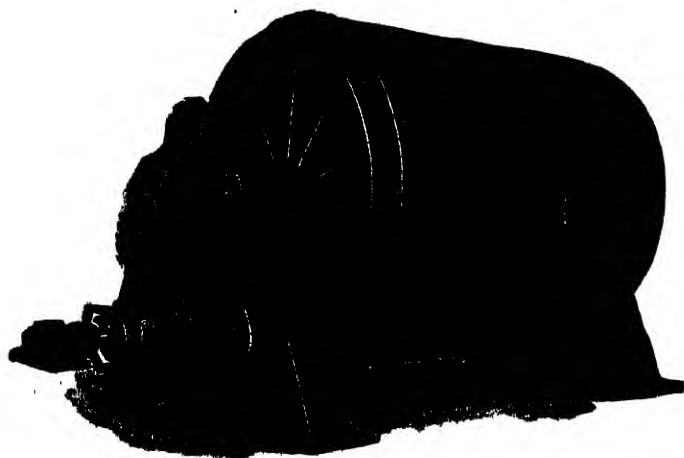
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Section of the

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AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by **W.G. MacNAUGHTON, Secretary**

AN ECONOMICAL PAPER MILL STEAM PLANT*

Figures are now available showing the results of operation for six months of the Canada Paper Company's new boiler plant at Windsor Mills, Que., which is believed to have established a record in economy among paper mill steam plants burning coal.

The figures are particularly striking in view of the comparatively small capacity—the normal load being only some 800 boiler horse power—while the item for fixed charges included in the cost of steam delivered compares very favorably with large modern installations.

The plant comprises three Goldie and McCulloch water tube boilers of the Babcock and Wilcox type, each containing 2,467 square feet of heating surface, equipped with superheaters and "Type E" stokers. Two boilers are normally in service operating at about 160 per cent rating. Space is provided for a fourth unit.

Economizers are installed proportioned to suit the particular conditions of heat distribution, and short gas passages and absence of steel flues between boilers and economizers ensure maximum utilization of all available heat in the gases.

The economizers are responsible for an increase in economy of approximately 5 per cent under present conditions, while the superheaters are justified by eliminating condensation in the long steam pipe lines and in increasing the economy of the main engines. Changes are now being made on one of the engines to further decrease the steam consumption during the summer months so that no steam may be wasted to the atmosphere.

A coal bunker with capacity for two to three weeks' supply is arranged conveniently for filling the stoker hoppers by hand, the bunker being served by an incline conveyor from the crusher pit and track hopper, to which coal is delivered either from railway cars or from the yard storage.

Special meters are provided on the boilers to guide the fire-

men in obtaining maximum efficiency of combustion in the furnaces, and by means of a separate recording flow meter on the independent steam line to the auxiliaries it is possible to keep a check on both the steam consumption of soot blowers, ash conveyor, etc., and also the times when they are used.

With the mill running six days per week the efficiency of steam generation in the boiler plant has been maintained at around 79 per cent average, including the Sunday banking, while a check run taken over seven weeks, with careful attention to weight of coal used and with periodic analyses taken of the calorific value, showed an even higher efficiency.

The following economic results are given. It will be noted that the steam and coal used per ton or pound of paper, include the heating of the mill as required during the months of March and April. For the purpose of comparing the cost of producing 1,000 pounds of steam with other plants the price and heat value of the coal must, of course, be taken into consideration. The figure of \$7.50 per ton of coal is given as an average price.

Mill operation: 6 days per week.

Average daily paper production: 53.5 tons per 24 hours.

Kind of paper. News and wrapping.

Superheated steam delivered to mill per ton of paper (including heating mill as in March and April): 9,470 pounds.

Total coal used per pound of paper (including boiler house auxiliaries, banking over Sundays, and heating mill): .593.

Total coal heat units per pound of paper (including boiler house auxiliaries, banking over Sundays, and heating mill): 7,110 B.t.u.

Total coal heat units per 1,000 pounds steam from and at 212 degrees, delivered to mill: 1,256,000 B.t.u.

Cost per 1,000 pounds of steam (including coal at \$7.50 per ton, 12,000 B.t.u., labor and electric current for boiler house motors):

Paper Testing Methods

This work was first published in 1920 and was revised and enlarged in 1922 by the Committee on Paper Testing. It was printed in serial form in these pages during July and August. Orders are being received for this work if published in book form, in paper, at \$2.00 per copy. As soon as orders for 200 copies are received, *Paper Testing Methods* will be issued. If you want the Methods published, send in your orders to the Secretary, Technical Association of the Pulp & Paper Industry, 18 East Forty-first Street, New York.

*Abstracted from *Pulp and Paper Magazine*, August 24, 1922.

Superheated, delivered to mill, 54.25 cents.	
From and at 212 degrees, delivered to mill, 45.30 cents.	
From and at 212 degrees, generated, 42.80 cents.	
Fixed charges, including repairs (15 per cent of cost of plant), per 1,000 pounds steam delivered to mill, 10.6 cents.	
Cost per ton paper for coal (\$7.50 ton, 12,000 B.t.u.)..	\$4.45
For labor and electric current in boiler house.....	.52
	<hr/>
	\$4.97
For fixed charges (15 per cent plant cost).....	1.20
	<hr/>
	\$6.17
	<hr/>

Note: The above article will be of interest to those concerned with steam plant operation, as well as those interested in mill costs and cost analysis. It illustrates the want of separation as to costs and statistical data on efficiency between two plants or departments: the steam plant producing heat, and the paper mill using it.

In the data given an effort has been made to separate them.

Steam plant

Per cent rating developed.....	160
Apparent evaporation from and at 212 degrees per pound of equivalent dry fuel (superheated steam per lb. coal).....	7.97 lbs.
Efficiency of plant with economizer.....	79%
Cost per 1,000 pounds superheated steam delivered (coal at \$7.50 per ton).....	\$0.5425

Paper mill

Grade.....	News and wrapping.....
Production per day.....	53.5 tons.....
Steam per pound of paper...	4.74 lb.
B.t.u. per pound of paper (coal 12,000 B.t.u. per pound)	5953

As 3,000 B.t.u. per pound of paper is recorded where not applied to mill heating, it would seem that 5953 B.t.u. given is excessive. It is noted that this includes mill heating during March and April and as indicated there are still improvements to be made.—Editor.)

THE DETERMINATION OF SIZING QUALITY

A Supplementary Report on an Investigation of the Electrolytic Method¹

By F. T. CARSON, ASSISTANT PHYSICIST, BUREAU OF STANDARDS*

For several years attempts have been made to apply Okell's proposed electrolytic method to the rather difficult problem of measuring the sizing quality of paper. Although the data obtainable are of a very positive nature and check results are good, indifferent success has attended the efforts to interpret these data in terms of sizing quality. An article was published recently in this journal giving the results of the investigation of the problem at the Bureau of Standards up to the first of the present year.² It has been the common experience of a number of laboratories which have attempted to use the Okell method that the data obtained cannot be depended upon to give a satisfactory indication of sizing quality. Facts which subsequent investigation has revealed may help to explain some of the difficulties. Although this method seems to be of doubtful value, other methods are under investigation and it is felt that a reliable test method is in sight.

The "Okell curve" is not a direct function of the amount of electrolyte absorbed but is a record of the meeting of the electrolyte in the center of the sheet. It could not be expected that the rise in conductance would be a measure of the amount of liquid absorbed. It was shown in the article referred to above that the conductance in the sheet is not a straight line function of the amount of electrolyte absorbed.

Since there is apparently no simple relation between these quantities it has not been possible to give a quantitative interpretation of the curve as a whole in terms of sizing quality. It might be supposed, however, that definite values of resistance or of current value in paper of the same thickness might represent equivalent stages of permeation and, therefore, afford comparative values. The application of such an interpretation has been rather disappointing.

The apparatus described in the previous article was so designed that the changing resistance was as nearly as practicable that of the paper sample alone. Fig. 1 shows a set of curves made with the apparatus as described.³ These curves serve the purpose of comparing the time required to reach a given resistance value or

current value, for with a given electrolyte a given reading on the slide wire represents a definite resistance in the paper. Previously it was pointed out that the resistance per unit thickness of a saturated sample varies over a wide range, and that as a result of this varying resistivity it has not been possible to interpret the curves satisfactorily. It was proposed to minimize this error by placing a comparatively large resistance in series with the cell so that the resistance of the saturated sample would be negligible as compared to it. Fig. 2 shows a set of curves made with the same papers under the same conditions, except that a 500-ohm coil was placed in series with the cell. It will be seen that the curves are distorted. They rise very rapidly at first, but when the resistance in the sheet approaches sufficiently near the resistance value of the saturated sample to be neglected in comparison with the total resistance the curve rises very slowly and is not sensitive to small changes in resistance. No advantage is gained by introducing the resistance coil. Another set of curves was made using a 200-ohm coil. While the curves were less distorted they still presented the same difficulties in interpretation as in the case of Fig. 2. A more promising method of eliminating the resistivity error was tried by attempting to take it into account by balancing the bridge before the test with a saturated sample in the cell, so that all curves would presumably rise to the same value of slide wire readings. While this procedure appeared to minimize the error it did not eliminate it sufficiently to make the method satisfactory. In these tests, samples of practically the same thickness were selected so that the thickness factor would not have to be accounted for. Number (1) and number (2) were all-rag bonds, number (3) a 50 per cent rag and 50 per cent chemical wood bond, number (4) a 100 per cent chemical wood bond, and number (5) a kraft paper. There was probably not much difference in sizing quality. An attempt to assign numerical values would result in differences of several hundred per cent in the values.

It seemed probable that the unaccountably high resistance of samples even after being saturated might be due to the insulating effect of minute air films retained within the paper. In order to determine whether or not the paper might retain such insulating air films a cell was designed to operate under reduced pressure. Resistance measurements were made on various samples saturated at atmospheric pressure and on samples from the same sheet satur-

* Published by permission of the Director of the Bureau of Standards of the U. S. Department of Commerce.
¹This is the second of a series of reports to be made from time to time as the investigation proceeds.

²"The Determination of Sizing Quality," PAPER TRADE JOURNAL, 4-6-22.
³The rheostats in the Wheatstone bridge were replaced by a non-inductive resistance box in order that all resistance data might be expressed in ohms.

ated by introducing the electrolyte into the cell after partially exhausting the air and later admitting atmospheric pressure. The results indicate that the retention of air films must influence the curves to a very considerable extent. Some of the results are shown in table I. It will be seen that the maximum variation in the resistance per unit thickness of various kinds of paper under ordinary conditions is several times that obtained under reduced pressure.

TABLE I

Kind of Paper	Normal resistance of saturated sample per thousandth of an inch	Reduced pressure resistance of saturated sample per thousandth of an inch
Rope manila.....	0.28 ohm	0.18 ohm
News print.....	.30 "	.28 "
Ledger (rag).....	.46 "	.46 "
Ledger (75% rag).....	.69 "	.41 "
Index Bristol (50% rag).....	1.04 "	.61 "
Kraft.....	1.80 "	.51 "
Chemical wood bond.....	3.73 "	1.09 "
Heavy chemical wood bond.....	4.11 "	1.02 "

The above data gives an explanation for the exaggerated difference in apparent sizing quality between a rag bond and a chemical wood bond of the same thickness. This indeterminate influence upon the data which is not a part of that aggregate of causes which produce the effect commonly known as sizing quality, renders such data of doubtful practical value in testing for or studying sizing quality. It is readily appreciated that the application of this method to a study of the influence of beating and other factors upon sizing quality might be very misleading. The destruction of air films by beating, or variation in amount of air film retention caused by beat-

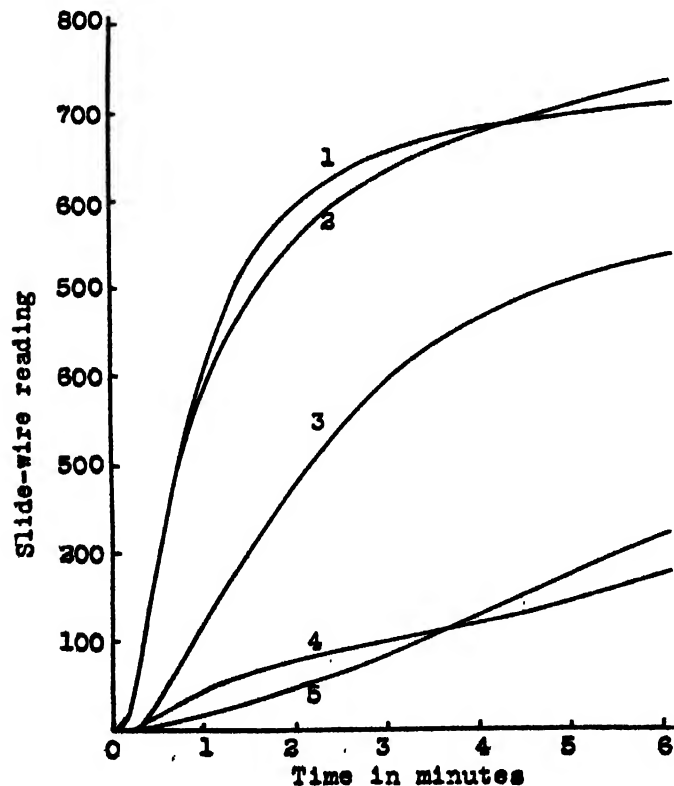


Fig. 1. - Normal curves.

ing, hydration, drying, calendering, etc., would produce upon the data curves an effect which would be independent of the sizing quality effect.

The curves of Figs. 1 and 2, and also the data of table I, seem to indicate that the extent of the influence of the air films on the data is a function of the kind of fiber in the paper. Rag stock, jute, manila and ground wood produce the least degree of error, while

as a rule the greater the amount of chemical wood the greater is the error due presumably to insulating air films. It would be expected, therefore, that the method would be most reliable when confined to control work on paper which does not vary much in

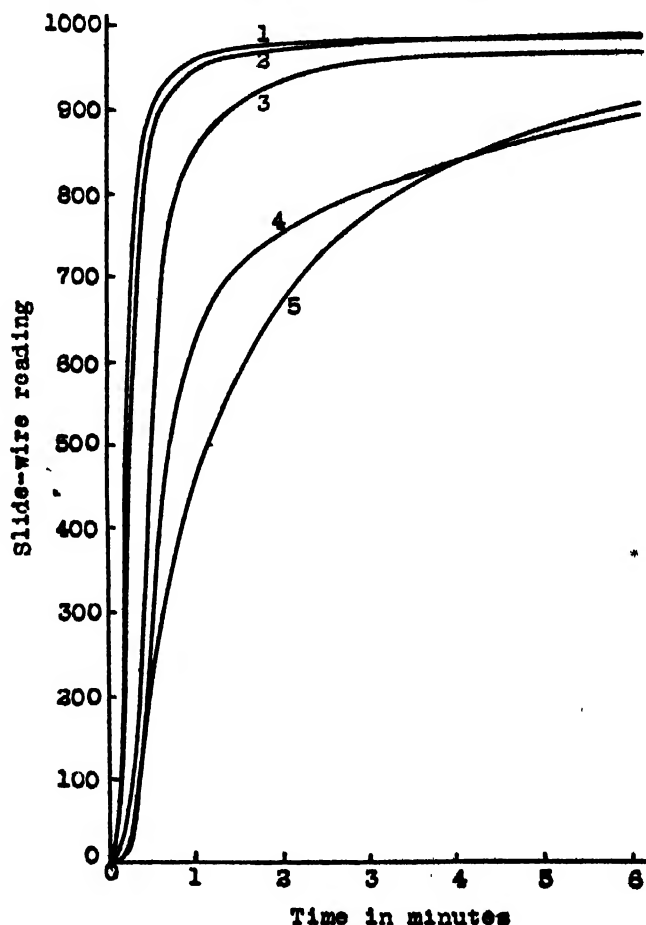


Fig. 2 - Curves made by placing 500 ohms in series with cell.

composition. It is understood that the method has been used satisfactorily for such a purpose in the manufacture of book paper.

Summary of Conclusions

The Okell method has been of value in helping to check qualitative results and in giving some information concerning the nature of the absorption process. It has also made it possible to demonstrate certain facts in relation to the problem of sizing quality, as for example the fact that any small hydrostatic pressure which may be unavoidable in certain test methods is entirely negligible in comparison with the capillary pressure. The original promise of the method for testing or research has scarcely been justified. The fact that no definite relation has been found between the data curve and the rate of absorption has made it impossible to give a satisfactory interpretation to the curve as a whole. The very considerable influence upon the curves of some indeterminate cause (presumably the presence of insulating air films) has prevented any quantitative interpretation of the data. Unfortunately, therefore, the method must be considered of doubtful value for the determination of sizing quality, despite the strong appeal made by the very positive nature of the data obtainable.

*F. T. Carson, The Determination of Sizing Quality, PAPER TRADE JOURNAL, April 6, 1922-1946.

A DICTIONARY OF PAPER TERMS

(Continued from last week)

Soap Wrapper. Paper used for direct contact with bars of soap—should not be discolored by the weak alkali—"alkali proof"—usually made of bleached chemical pulp.

Soda. Properly sodium oxide Na_2O , often used of other alkaline compounds of sodium such as sodium hydroxide or caustic soda; sodium carbonate or soda ash.

Soda Ash. See Sodium Carbonate.

Soda Mill. An establishment where pulp is produced from wood by the soda process.

Soda Process. A method of producing chemical pulp from wood by heating it under pressure with a solution of caustic soda. The spent cooking liquor (black liquor) is recovered, evaporated and burned to black ash from which the soda carbonate is then dissolved and causticized with lime for further use. Poplar, birch, bass, and other hard woods are treated by this process. Coniferous woods are used to some extent.

Soda Pulp. Chemical wood pulp produced by the soda process.

Sodium Arsenite. $\text{Na}_2\text{HAS}_2\text{O}_4$. The solutions of arsenious acid accomplished by boiling it with sodium carbonate contain the compound, sodium arsenite, hence these solutions are known as sodium arsenite solutions. They are used to check the strength of iodine solutions.

Sodium Bisulphate. See Niter Cake.

Sodium Bisulphite. NaHSO_3 . Sodium acid sulphite, a bleaching agent for bleaching mechanical wood pulp used in the lower grades of book and rotogravure papers. Also used as an antichlor.

Sodium Bicarbonate. NaHCO_3 —baking soda, or saleratus, an alkaline compound used in dry fire extinguishers, and sometimes to prevent mold in timber.

Sodium Carbonate. Na_2CO_3 found in the crystalline form as washing soda or sal soda— $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ (an efflorescent salt, losing 5 molecules of H_2O at temperatures over 55°F). Soda Ash is sodium carbonate in the dry form. It is usually rated on its content of Sodium Oxide Na_2O , which would be a little over 58% if the carbonate were pure. (See Soda Process, Rosin Size and Drinking Waste Paper.) In paper mills one of the most commonly used chemicals.

Sodium Chloride. Common salt. NaCl . Used as a raw material in electrolytic bleach plants as a source of chlorine and soda. In an old method of preparing rosin size, largely obsolete, a solution of salt is used to purify the rosin soap from excess alkali and coloring matter.

Sodium Hydrate. See Sodium Hydroxide.

Sodium Hydroxide. NaOH . Also called sodium hydrate, and caustic soda, a strongly alkaline, corrosive deliquescent compound; the active component of cooking liquors in both soda and sulphate processes.

Sodium Hypochlorite. NaOCl . The active bleaching agent in javelle water and labarraque's fluid. In javelle water it is obtained by treating bleaching powder with soda ash and allowing the resulting carbonate of lime to settle. May be obtained from sodium chloride by the action of the electric current and is so prepared for use in laundries and to some extent in paper mills.

Sodium Peroxide. Na_2O_2 . A powerful alkaline oxidizing and bleaching agent, sometimes called "Ozone." It must be

kept away from water. The great heat produced when water comes into contact with this compound is liable to cause fires or explosions. It is highly corrosive and must be handled with care. Used in connection with the Parr calorimeter for determining the heating value of fuels.

Sodium Silicate. Often called "water glass," "soluble glass" and sometimes, "glass water." Compounds of sodium and silicic acid, having the formulas

(a) Na_2SiO_3 .

(b) $\text{Na}_2\text{SiO}_3 \cdot 9\text{H}_2\text{O}$.

(c) $\text{Na}_2\text{Si}_2\text{O}_5$.

are probably present in varying and indefinite amounts with water. It is usually a syrupy fluid, but may be a solid in granular or powdered form. Used in digester lining cements, for fireproofing, as an adhesive for boards and sometimes as an adjunct in sizing paper.

Soft Roll. A roll of paper badly wound. It may be soft at either end or entirely across the roll and condition is usually due to variations in thickness of the web.

Soft Sized. Paper containing very little size but not "water leaf," which contains no size. See Slack Sized.

Solder. An alloy of lead and tin used to seal metal contacts or for repair work. Best proportions for practical purposes are half lead and half tin, which alloy melts at 188°C . Solder for brass or copper contains two parts of lead and five of tin and melts at 170°C .

Soluble Blue. Soluble form of prussian blue, also a trade name for some coal tar colors.

Soluble Glass. See Sodium Silicate.

Soluble Starch. Starch which has been heated with glycerine, to which also alcohol is added while cooling. Used as an emulsifying agent in textile industries and as an indicator for iodine in chemical work.

Sorter Number. Pencil marks on the corners of reams giving the number of the sorter, for use in case of complaint or defect.

Sour. Acid used either to accelerate bleaching or to produce an acid bath in dyeing for which acetic is used.

Spanish. The highest grade of esparto grass.

Spar. (1) A term used in mining for any glittering mineral, in some cases referring to calcite, (carbonate of lime) as calcespar, or to mixtures of silicates of aluminium, soda and potash, as felspar. Iceland spar is a form of calcite having a peculiar reaction with light rays, hence is used in polariscope work.

(2) A round piece of timber, as the yard or mast of a sailing vessel.

Specifications. The stated sizes or limits of machinery or construction work, or the tests of strength and quality which a product must comply with to assure purchaser, engineer, inspector or other interested party that the building, machinery or product will serve its purpose satisfactorily.

Spiral Laid. A dandy roll in which the laid wires are ranged in a circular way. Ordinarily the laid wires run from end to end of the roll. The sheet travels under a spiral dandy with less resistance, consequently the finished paper has a distinctive appearance.

Spreader. (1) A roll of comparatively small diameter on which a strip of felt is spirally wound. The spiral begins at the center of the roll and runs out to the ends. Press or other felts carried on this roll will thus be kept from crowding to the center (worm roll).

(2) A flexible curved bar in connection with the winder over which the web of paper is drawn either before or after being slit to prevent wrinkles or the interweaving of the rolls while being made.

Spruce. Several species of coniferous trees. Black Spruce, *picea mariana*, Blue Spruce, *picea parryana*, Engelmann Spruce, *picea engelmannii*, Red Spruce *picea rubens*, Sitka Spruce, *picea sitchensis*; White Spruce, *picea canadensis*.

All these species have been used for pulp making by all processes. The black, red and white spruce in the eastern parts of North America and the Engelmann and Sitka on the Pacific Coast.

Spur Gear. A gear drive in which the driving planes are parallel as in clockwork. The axes of the shafts are also parallel though at right angles to the driving plane.

Stannous Chloride. See Tin.

Starch. A compound occurring in most seeds, containing the fuel energy for the growth of the germ in the soil. It is a carbohydrate with the formula $(C_6H_{10}O_5)_n$. It is therefore, isomeric with cellulose. The chief commercial sources of starch are wheat, potato, corn, rice and tapioca. Starch occurs as minute cells differing in size and shape, wheat and potato being quite large as compared with corn or tapioca starches. Upon heating to boiling the cells burst and form a mucilaginous mass. Starch is used as a sizing adjunct in paper (Feculose). It also helps to keep the stock in a colloidal condition in the beater, thus making a slower stock on the wire and tending to improve the formation of the sheet. It is said to give a better finish and improve the cutting qualities of paper for special purposes such as envelopes.

Steam Trap. A device whereby condensed water is eliminated from the steam system while preventing the loss of steam that would take place by open exhaust.

Stipa Tenacissima. See Esparto.

Stock. Term used for half-stuff or wood pulp running to machines or wet machines, practically any fibrous pulp suspended in water. Also used with reference to the material used, as rag stock, sulphite stock, paper stock, etc., as well as to general supplies or product on hand.

Stone. The circular grindstone used for making mechanical pulp or ground wood, which see, also "grinder."

Straw. The stems of various cereal plants used for paper making, wheat is most frequently used. Rice straw makes a very fine short fiber for special purposes.

Straw Board. A coarse box or packing board made from straw after very incomplete treatment. Used for egg case fillers and corrugated box board in fiber shipping boxes.

Stretch Roll. There are several of these on the paper machine. They are rolls of small diameter. Felt or wire run under or over them and they can be moved forward or backward, up or down to take up slack or increase tension.

Stuff. The prepared mixture of fiber, size, etc., ready for manufacture (Stock.)

Stuff Chest. The supply tank containing stock prepared for the machine.

Stuff Pump. Pump for supplying stuff or stock to the paper machine, screens, or chests. Usually understood to mean a plunger pump but is sometimes a centrifugal.

Suction. An effect produced by withdrawing air from a closed space by air pumps or other appropriate means.

Suction Box. An oblong metal box extending the full width of the machine wire and over which the wire passes. It is closed on three sides, but the top over which the wire passes is perforated. Air pumps are connected to the boxes and the suction produced acts to draw water from the partly formed paper passing over it on the machine wire. Used similarly on the first or wet felt and on the felts of wet machines.

Suction Couch Roll. A couch roll (cf.) fitted to act as an additional suction box by means of the perforated shell which is only in action at the portion of its periphery in contact with the sheet of paper on the wire.

Sugar of Lead. See Lead Acetate.

Sulphate of Alumina. See Alum.

Sulphate Process. A process to produce chemical pulp, by cooking wood chips under proper pressure and temperature in a solution of caustic soda. After the cooking is completed the spent liquors are recovered by evaporating and burning. The resultant ash is carbonate of soda and must be causticized by treatment with quick lime, when it is ready for further use. There are losses of soda in the cycle and this is made up by adding sulphate of soda. Sulphur compounds are thus introduced and by reduction in the smelting furnace form sodium sulphide, which increases the effectiveness of the cooking liquor and incidentally gives rise to organic sulphur compounds leading to the disagreeable odors associated with this process. This process is effective for many grades of wood especially the highly resinous southern pines. (Kraft.)

Sulphite Process. The process whereby wood chips are cooked in a solution of bisulphite of lime, with heat and pressure, to dissolve the non-fibrous portions and produce a chemical pulp suitable for paper making—spruce, balsam, hemlock, and interior pines are treated by this process. (See Mitscherlich.)

Sulphite Turpentine. See Cymene.

Sulphur. An element. Atomic weight 32.07 specific gravity 1.95 to 2.05, melting point about 120° C., boiling point 445° C., ignition point 255° C. Essential to the sulphite pulp industry as the source of its cooking liquor—Iron pyrites— FeS_2 , also used to some extent as a source of sulphur.

Sulphur Burner. See Burner.

Sulphur Dioxide. The gas produced by burning sulphur or pyrites in air. Formula SO_2 . Molecular wt. 64.07. 1 liter weighs 2.9268 grams.

Density 2.2638 (air = 1).

Dissolved in water its solution is sulphurous acid.

Sulphur Trioxide. A pungent gas SO_3 , which combines with water to form sulphuric acid. (See Sulphuric Acid.) Occurs to some extent as an impurity in SO_2 from burning sulphur.

Sulphuric Acid. H_2SO_4 , also called oil of vitriol. A powerful corrosive liquid, usually sold in concentrated form. Destroys wood by abstracting water from the cellulose aggregate. When diluted is actively corrosive on metals. At 66° Bé acid is about 93% H_2SO_4 . Used to some extent in dilute form to clean machine wires and felts.

Sulphurous Acid. See sulphur dioxide.

Super Calender. An extra calender usually in the finishing room, for imparting extra finish to paper. (See Calender, Bowls.)

Super Heat. Heat applied to or carried by steam in excess of the heat normally present in steam at corresponding pressure. Steam cannot be superheated in the presence of liquid water.

S. V. R. Rectified spirits of wine, first letter of latin words—*Spiritus Vini Rectificatus*. (See Rectification.)

Sweat Roll. A cooled roll, usually about same size as pony roll, at end of driers on paper machine to help in carrying sheet over to calenders. In the relatively high humidity of the atmosphere, moisture is condensed on the cooled roll which is transferred to the paper coming in contact with it.

Syphon. (1) A device by which the pressure of the atmosphere is applied to cause liquors to flow in pipes over obstructions by the weight of an unbalanced portion of the liquor in the lower, or longer, leg or end, of the system. (2) The pipe extending inside the drying cylinder from the journal to the lower surface through which the water of condensation is removed by pressure or vacuum.

T

Table Bar. The bars extending along each side of the fourdrinier part and supporting the bearings of the table rolls.

Table Rolls. The rolls of the fourdrinier part placed in a series between the breast roll and the couch roll and supporting the paper making surface of the wire.

Tachometer. An instrument for indicating speed of revolution. One is usually attached to one of the rolls in the dry end of the paper machine to indicate the speed of the paper in feet per minute.

Tackle. (1) The means for handling heavy rolls in changing wires, etc.

(2) A term referring in general to the flybars and bed plate in a heater.

Tailings. Refuse knots or chips in a chemical pulpmill, or rejected material from bull screens in a mechanical pulp mill. In general any refuse or material of no value, or rejects at some stage of manufacture.

Tailing Screen. A screen to sort the material rejected by other screens. On occasion it may contain much good stock which is thereby recovered.

Tail Race. The channel carrying away the water discharged from the draft tube after it has passed through the water wheels. (See Headpan.)

Tail Rod. A rod extending from the piston in a grinder cylinder, serving as a guide to the piston and the pressure foot.

Talc. A mineral, silicate of magnesia, often called soapstone. It is very soft and when well ground is used as a filler for paper. *Agalite* and *asbestine* are trade names for fillers prepared from similar minerals.

Tamarack. A tree, *Larix laricina*, commonly called larch, sometimes hackmatack. In Quebec "*Epinette rouge*." A conifer, but not evergreen. Yields fair pulp but of poor color by all processes, not readily bleached.

Tank System. See Tower System.

Tannic Acid. An organic acid obtained from the bark and wood of many trees, such as the oak, hemlock, mimosa, quebracho. Used as a test for animal size in paper.

Tap. (1) To enlarge a hole in metal.

(2) The tool used.

(3) To draw water or stock from a tank.

(4) A small valve for letting water or other liquids out of pipes.

Target. A heavy baffle plate of bronze or cast iron placed in the inner side of the blow pit or hung suspended against which the pulp strikes as it is discharged from the digester

through the blow-off pipe. The action helps to open the stock, i. e. to break up the chips which, even after cooking, retain in a large measure their original form.

Temperature. The degree to which a substance is heated or cooled, not a measure of quantity. See Thermometer.

Terra Alba. See Calcium sulphate.

Testers. See Ashcroft and Mullen.

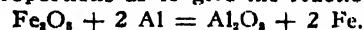
Thermal Units. The British thermal unit (B.t.u.) is the amount of heat required to raise the temperature of one pound of water at 63° F. through one degree Fahrenheit. The calorie (Cal.) is used in scientific measurements. It is the heat required to raise one gram of water at 17° C. one degree centigrade.

One calorie per gram is equivalent to 1.800 B.t.u. per pound.

1 B.t.u. = 251.99 calories.

1 Calorie = 0.003968 B.t.u.

Thermit. A process of welding iron whereby very large sections can be successfully joined. The agent is a mixture of finely ground aluminum and iron oxide mixed in such proportions as to give the reaction.



The mass is ignited in a crucible and poured into the specially prepared mold round the point to be repaired. The procedure varies with different cases.

Thermometer. An instrument to measure the temperature of bodies usually accomplished by measuring the expansion and contraction of liquids or solids under the influence of heat. Two scales are in general use based on the boiling and freezing points of water at sea level—760 mm. of mercury or 14.697 lb. per square inch absolute pressure. The earlier Fahrenheit scale is based on the lowest temperature that Fahrenheit, its originator, was able to secure. This he called zero, and with mercury in a tube he noted the expansion or rise to the boiling point of water, dividing the total rise into 212 parts or degrees. This placed the freezing point of water at 32° thus there were 180 degrees between freezing and boiling points of water.

The later centigrade scale fixed the freezing point of water at zero and divides the distance between it and the boiling point into 100 degrees. Thus the relationship between Fahrenheit and centigrade degrees is as 100 is to 180 or 5 to 9. Fahrenheit is converted to centigrade by subtracting 32, dividing by 9 and multiplying by 5. Centigrade is converted to Fahrenheit by dividing by 5, multiplying by 9, and adding 32.

Thickener. Apparatus for increasing the concentration of fluid stock by the removal of a portion of its water. See Decker.

Thiosulphuric and Thionic Acids. Acids sometimes present in sulphite cooking liquors, which, due to the influence of heat on the solutions, are broken down toward the end of the digestion yielding sulphur trioxide, sulphur dioxide and free sulphur.

Third Hand. The third member of a paper machine crew. His duties are generally to attend the winder and dry end of the machine under the second hand. On small machines he may be the junior member and also tend broke and do the oiling.—Winderman.

Thrasher (or Whipper). (1) A reel which is rotated against the felt to loosen adhering fiber which is washed off by an accompanying spray of water.

(2) A machine used in the preliminary treatment of rays whereby the dust is beaten out.

Three Tower Systems. In some sulphite mills a third tower is used to absorb the gases relieved from the digester dur-

- ing the cooking operation, while in others the third tower is used as a spare in case of shut down of one of the others.
- Tightener.** (1) An arrangement whereby a roll having a sliding bearing is controlled by weights or otherwise acting against the pull of the felt running over it, thus keeping it taut.
- (2) An idler pulley, pressing on a belt.
- Tilghman.** Benjamin Chew—an American chemist who in 1866 obtained the first patents for preparing chemical pulp by cooking wood in a solution of sulphur dioxide in water, with or without the addition of bisulphite of lime or magnesia.
- Tin.** Tin salt—tin crystals—stannous chloride, used in connection with certain dyestuffs in coloring paper.
- Tintometer.** An instrument for comparing and recording numerically the color values of surfaces and liquids. Lovibond's tintometer uses slips of standard yellow, red and blue glass, of varying depths of color which may be superimposed to get composite values of transmitted light.
- Also Ives Tintphotometer.
- Tissue.** Very thin paper in many varieties, usually unsized, nearly transparent, so-called originally, not from its texture but from its use in separating the fold of fine silk tissue.
- Titration.** The act of running a standard solution from a burette in determining the strength of cooking liquors.
- Toilet Paper.** Very thin usually M. G. papers put up in packets of cut pieces or in rolls with or without perforations.
- Tour.** Usual pronunciation "tower." The portion of the twenty-four hours during which workers are on duty. In a two shift day, work is usually from 7 A. M. to 6 P. M. for the day tour and from 6 P. M. to 7 A. M. for the night tour. The three shift day is divided into tours, of eight hours each. The term also refers to the weekly rotation in consecutive order.
- Tower System.** In sulphite mills the production of liquor in towers containing limestone, as contrasted with the milk of lime or tank system. In the tower system the burner gas is delivered to the foot of a tower filled with limestone over which water is trickling. In the milk of lime system the gases are drawn or forced through tanks of milk lime.
- Tracheids.** The wood fibers of coniferous trees, such as spruce and fir, characterized by curiously pitted cells readily detected in chemical pulp when examined under the microscope.
- Tracing.** Paper rendered transparent for tracing purposes by being soaked in a solution containing a mixture of Canada balsam, turpentine and a trace of vegetable oil, and then hung up until dry.
- Transfer.** Paper used for the transfer of colored pictures and designs to tin vessels and boxes used for packing food and condiments. The paper is first surfaced with starch and then coated with gum or dextrine. The coating mixture is such as will readily strip from the paper. When put down on lithographic stones and the back dampened all the ink of the transfer is left on the stone.
- Trap.** A device for preventing steam waste or for sealing a pipe as in the familiar gooseneck curve used under sinks—See steam trap.
- Travel.** The extreme distance covered by any reciprocating piece of machinery.
- Triple Effect.** An evaporator which removes vapors from liquids by exposing them in succession to three descending conditions of heat, usually the first effect is under pressure, the second effect under little or none, and the third effect under vacuum. The heat of the liquor under descending pressures of vacua is sufficient to cause vaporization.
- Triplex.** (1) Paper surfaced with three colors used for tickets and wrappers; term also applied to stiff paper composed of a middle surfaced on either side with colored papers.
- (2) A plunger pump having three pistons—(Simplex duplex).
- Tripoli.** (1) Esparto grass coming from Tripoli, Northern Africa. Inferior to Spanish grass.
- (2) A finely natural material used for polishing purposes. Kieselguhr diatomaceous earth, siliceous.
- Trotters or Bumpers.** The parts of the mechanism of screens which in conjunction with the cams or knockers operate the diaphragm or imparts movement or vibration to the cylinder or vat in some types of rotary screens.
- Trough.** See washer trough, generally any narrow tank of which length is the principal dimension.
- T. S.** See tub-sized paper.
- Tub.** A tank—frequently refers to a beater. Also to sizing.
- Tube Papers.** Soft unsized papers, made with a good percentage of rag, for making tubes or spools on which the yarn for spinning machines is wound.
- Tub-Sized.** Paper was originally and is now at times sized by dipping the sheets into a vat or tub of animal size, in distinction from engine sizing, when the size is mixed in the pulp. Tub sizing is often referred to as top sizing. The effect is obtained on the paper machine by placing a vat (tub) and rolls at a point in the dryer part about two-thirds of the distance from the wet end. The dried sheet is carried through the vat and squeezed between rollers being afterwards loft dried.
- Turmeric.** A chemical test paper prepared by soaking filter paper in an extract of turmeric root. Used for detecting traces of alkali.
- Two Tower System.** A system of preparing sulphite liquors wherein one tower is used for strong liquor and the second tower for weak liquor, using the excess gas from the strong acid tower. By properly arranged piping and valves the two towers are interchangeable.
- Twaddell's Hydrometer Scale.** Used for measuring the density of liquids heavier than water.
- Reducing Tw. degrees to specific gravity use this formula
- $$S = \frac{5T + 1000}{1000}$$
- or to Baume degrees use this—Bé = $\frac{145T}{200 + T}$
- This instrument is most frequently used in soda pulp mills and for bleach liquors. See hydrometer.
- U**
- U. Frame.** A frame, so shaped, that supports the breast roll bearings on a Pusey and Jones paper machine shake.
- Ultramarine.** A double silicate of sodium and aluminum, prepared by fusing kaolin, sodium sulphate and charcoal in a crucible and roasting the green substance with sulphur. The blue mass formed is dried and powdered and sold as ultramarine. Generally the term is used for a characteristic blue shade, but there are ultramarine greens and reds. Barium chromate is sometimes called ultramarine yellow.
- Umber.** A brown earth pigment owing its shade to oxides of iron. See ochre.
- Umpherston Beater.** A beater in which floor space is saved by circulation of the stock under the back fall and bedplate returning the stock upwards to the face of the roll. From the designed.

(To be continued.)

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Properties, Chemistry and Testing of Raw Materials and Finished Products

Benzidine Hydrochloride as a Reagent for Lignocellulose.—C. Van Zijp. *Pharm. Weekblad*, lviii, 1539-1542 (1921); *Analyst*, xlvii, 35 (Jan. 1922).—Although a solution of benzidine hydrochloride containing no free hydrochloric acid gives a more intense (red orange) coloration than an acidified solution (orange) with lignocellulose, it is preferable to have free hydrochloric acid present, since it renders inactive other constituents of woody fibers which give a brown coloration with the reagent. The solution is prepared by dissolving 0.2 gram benzidine in 19 cc. of water and 1 cc. of 25 per cent hydrochloric acid, and will keep well in a bottle of brown glass. The test may be applied directly to sections, preferably washed with alcohol containing 1 per cent of hydrochloric acid, to remove any iron derived from the microtome. In testing wood meal (or pulp) for lignified substance the preparation is treated first with the benzidine reagent, and then, without washing, with a drop of iodine and potassium iodide solution, and exposed until all the iodine has evaporated; the blue-black coloration given by benzidine hydrochloride with iodine and potassium iodide solution disappears, whilst the wood meal nucleus remains dark blue and the lignified constituents orange.—A. P.-C.

The Constitution of Pine Lignin. II.—Peter Klason. *Ber.*, lv, 448-455 (1922); *J. Soc. Chem. Ind.*, xli, 247A (April 15, 1922).—The homogeneity of calcium alpha-ligninsulphonate is established by the uniformity in composition of specimens of the beta-naphthylamine salt obtained from it by fractional precipitation with beta-naphthylamine hydrochloride. A modified formula for alpha-lignin is proposed.—A. P.-C.

Lignin as it Occurs in Wood.—Peter Klason. *Ber.*, lv, 455-456 (1922); *J. Soc. Chem. Ind.*, xli, 247A (April 15, 1922).—A specimen of lignin obtained from pine wood by repeated alternate extraction with boiling water and alcohol containing a little acetic acid was found, after allowance for the water contained in it, to give analytical results in excellent harmony with those calculated for lignin. The substance also gave the typical lignin reactions. As far as can be observed by reason of the color of the solutions, lignin and ligninsulphonic acid are optically inactive.—A. P.-C.

Derivatives of Straw Lignin.—F. Paschke. *Cellulosechem.*, iii, 19-21 (1922). *J. Soc. Chem. Ind.*, xli, 247A (April 15, 1922).—Derivatives were prepared from lignin isolated from straw by digestion with sodium carbonate: (1) by heating with phenylhydrazine, (2) by heating with nitrosodimethylaniline and hydrochloric acid, (3) by treating with sulphuryl chloride in the cold, (4) by heating with sulphuryl chloride at 100°C. under pressure, (5) by treating with a phosphorus pentachloride in tetrachloroethane solution. The properties of these derivatives are described. It is suggested that (4) and (5) might find technical applications as lacquers.—A. P.-C.

The Use of Cereal Straws for Paper Making.—Ch. Groud. *Papier*, xxv, 150-159 (April, 1922).—The author briefly reviews the paper making qualities of the various cereal straws and suggests that small plants be established in the various agricultural centers for transforming part of the straw into cattle feed and the remainder into paper pulp.—A. P.-C.

Gloss Characteristics of Photographic Papers.—L. A. Jones and M. F. Fillius, Research Laboratory, Eastman Kodak Co. *Brit. J. Phot.*, lxix, 216-218, 229-232 (1922); *J. Soc. Chem. Ind.*, xli, 392A (May 31, 1922).—The gloss of a paper is dependent on the relation between the light which is diffusely and regularly re-

flected respectively from the paper surface. An instrument termed a "gonio-photometer" is described, which consists essentially of a standard light source to provide incident light (preferably parallel), and a photometer by means of which the intensity of light reflected at various angles by the paper can be measured. The gloss value of the paper is obtained by comparing the brightness of the surface when viewed normally, and at the angle of specular reflection, the incident light falling at 45°. With another instrument, the "gloss meter," direct measurement of the relative brightness of the surface viewed normally at the angle of regular reflection is obtained. The illuminating beam is incident at 45°, and the light rays leaving the paper surface normally and at 45° are brought to intersect at 90° in a photometer tube. The brightness of the two images can be varied by means of neutral tint wedges and a photometric balance obtained. The scale carried by one wedge is calibrated to read the ratio of brightness, or directly in gloss values. The gloss value increases rapidly with increase in density of image on the paper, and measurements should therefore be made on fixed, unexposed paper. Classification of papers according to the numerical ranges of gloss value is discussed.—A. P.-C.

Determination of the Fluorescent Power of Cellulose.—S. J. Lewis. *J. Soc. Dyers Col.*, xxxviii, 68-76, 99-108 (1922); *J. Soc. Chem. Ind.*, xli, 366A (May 31, 1922). The investigation of the fluorescent properties of cellulose previously described (see this journal, lxxiv, No. 4, 49, Jan. 26, 1922) has been continued and a method of spectro-fluorescometry has been developed which is capable of an accuracy of 1 per cent relative to the fluorescence of filter paper (Whatman No. 42) which has been chosen as a standard. The moisture content of a substance has but little influence on its fluorescent properties, so that all the substances as yet examined have been used in their air-dry solid state. The fluorescent properties of cellulose, hydrocellulose, cellulose acetate, viscose, nitrocellulose, wool, silk, wood, and sugars have been quantitatively expressed by means of curves, the forms of which show definite relationships to the characters of the substances examined. No general conclusions as to chemical constitution can be drawn as yet.—A. P.-C.

Forestry

A Forest Survey from the Air.—Ellwood Wilson, Laurentide Co. *Pulp and Paper*, xx, 453 (June 1, 1922).—A description of an aerial forest survey, as actually carried out, showing the ease and accuracy with which observations could be made. Though the author does not give any cost figures, he states that it is twenty dollars per square mile less than that charged by a large firm of consulting foresters for a big tract of land much more favorably situated and easier of access than that under consideration, and thirty dollars less than figures of one of the large companies for work done in 1920.—A. P.-C.

Bleaching, Bleach Manufacturing and Equipment

Method of Bleaching Paper Pulp.—U. S. Patent 1,413,154. J. C. Baker, assignor to Wallace & Tiernan Co., Inc., April 18, 1922.—A further amount of chlorine is incorporated with a solution of calcium hypochlorite prepared according to U. S. Patent 1,403,993 (See C. F. Wallace and J. C. Baker, this journal, lxxiv, No. 22, 51, June 1, 1922) after allowing the latter to settle to remove the impurities. The liquor thus prepared must be used at once: or, the alkaline hypochlorite and chlorine solutions are prepared separately and mixed in desired proportions just before using.—A. P.-C.

Paper Manufacturing and Equipment

Billingham Waste Paper Recovery Process.—U. S. Patent

1,399,184, M. C. J. Billingham, Dec. 6, 1921. *Paper*, xxix, No. 15, 12-13 (Dec. 28, 1921).—This patent covers an apparatus for carrying out the process covered by U. S. Patent 1,384,987 and (can. Patent 213,090. (See this journal, lxxiv, No. 13, 53, March 30, 1922.) It consists essentially of a vertical cylindrical tank having a concave bottom with a central discharge connected with the intake of a circulating pump, and a standpipe mounted centrally on top of the tank, the discharge from the pump delivering centrally into the standpipe, the relative capacities of the various pipes being such that the stream of stock discharged from the pump impinges with the stock descending within the standpipe.—A. P.-C.

Color Effect of Rosin Size Emulsion on Finished Product.—N. F. Becker. *PAPER TRADE J.*, lxxiv, No. 15, 313-315 (April 13, 1922); *Paper*, xxx, No. 7, 70, 72 (April 19, 1922).—Experiments carried out with the higher grades of rosin have shown that the slight improvement in color thus obtained required a very much larger amount of the paler rosin to produce the same results as are obtained from grades I, G, H; and the author suggests that this may be due to the presence of small amounts of pine oil and similar substances in the pale rosin, which oil has a tendency to coat the fibers and prevent the rosin from coming into intimate contact with these fibers. Rosin contains a few per cent of colophenic acid, the salts of which are of a very dark brown and detrimental to the color of the size. Other factors being the same, the color of the size emulsion will vary according to the amount of free rosin. The color of the size emulsion also depends on the temperature of the size wax and of the water, and it is particularly important not to add cold water in the hot size emulsion. The author recommends that color standards for comparison of the color of the milk be made, using any standard white ink diluted with standard ferric chloride solution.—A. P.-C.

Expansible Cylinder Mould.—U. S. Patent 1,411,870, R. Richardson and J. F. Key, April 4, 1922.—A. P.-C.

Technology of Paper Making Felts.—John Standish, F. C. Huyck & Sons, Albany, N. Y. *PAPER TRADE J.*, lxxiv, No. 11, 46-49 (March 16, 1922); *Paper*, xxx, No. 3, 7-10, 14 (March 22, 1922).—A description of the manufacture of paper making felts, of the care required to obtain maximum service out of them, of the foes of felts, and of the chief causes of felt troubles.—A. P.-C.

Paper Folding Machine.—U. S. Patent 1,411,779, H. L. Glaze, assignor to Plastond Products, Inc., April 4, 1922.—A. P.-C.

Paper Cutting Machine.—U. S. Patent 1,413,206, R. S. Tyler, assignor to Chandler and Price Co., April 18, 1922.—The patent covers a device for operating the knife in such a way as to prevent cattering.—A. P.-C.

The Manufacture of Jute Board.—John Plister, *Pulp and Paper*, xx, 293-294 (April 13, 1922). See this journal, lxxii, No. 12, 52, March 17, 1921.—A. P.-C.

Paper Creping Machine.—U. S. Patent 1,411,656, W. W. Colley, April 4, 1922.—Creping rollers, having respectively a smooth and rigid and a relatively soft and resilient surface, are operated in combination with an "obstructor" constituted by a straight-edged flat blade so mounted as to present its edge between the surfaces of the creping rolls at or near their line of bite. The paper is drawn forward by contact with the surface of the rigid roller and carried at such a rate between the edge of the obstructor blade and soft roller that the paper, owing to its advance being momentarily checked at short intervals, is alternately crowded-up and allowed to pass the edge of the obstructor. Means are provided for impressing the paper with transverse lines of weakness or for dividing it longitudinally, or both.—A. P.-C.

The Manufacture of Carbon Paper Stock.—Eriogerg. *Papeterie*, xlv, 109-110 (Feb. 10, 1922).—Brief practical notes on the raw materials, cooking, washing, breaking, bleaching, and handling on the paper machine.—A. P.-C.

Method of and Apparatus for Manufacturing Sheets of Plastic and Fibrous Material.—U. S. Patent 1,411,330, J. P. Elliott, April 4, 1922. Addition to U. S. Patent 1,352,796, Sept. 14, 1920. The first patent covered the process of making sheets of fibrous material and a material which becomes a binder on heating by first manufacturing sheets of the fibrous and the other material and then uniting several such sheets by heat and pressure. In passing the sheets through the squeeze rolls, there is always more or less of a tendency of the material to pile up in advance of the rolls. The difficulties resulting from this are overcome in the present patent by constructing at least one squeeze roll of each set so that its working surface is interrupted at one or more places, thus releasing the grip on the work at intervals. The interruptions are made to occur in different angular positions in the series of sets of rolls, or the sets are so spaced from each other that any ridges formed across the sheets due to piling up of the material in advance of one set will be flattened by the next set.—A. P.-C.

The Use of Air in the Paper Industry.—J. O. Ross, Ross Engineering Corporation, New York. *PAPER TRADE J.*, lxxiv, No. 12, 41-49 (March 23, 1922); *Paper*, xxx, Nos. 4, 5, 7 (March 29, April 5 and 19, 1922). Brief discussion of the general principles of air engineering (defined as "the science of changing the conditions of the atmosphere"), together with an outline of its various applications in the pulp and paper industry (wood room, beater room, rag room, wet machine room, paper machine room, coating mill, gummed paper mills, etc.).—A. P.-C.

Articles Produced from Pulp and Paper

Re-enforced Box Blank Material and Method of Manufacturing It.—U. S. Patent 1,410,622, Geo. W. Swift, Jr., March 28, 1922. Also (can. Patent 218,213, May 2, 1922).—The material is built up of several plies of paper, and one or both of the outer (or surfacing) sheets is folded by passing through suitable blade folders arranged to form two parallel spaced folds or pleats just prior to being brought into contact with the filling web.—A. P.-C.

Machine for Making Paper Receptacles.—U. S. Patent 1,411,338, W. Fuhr, assignor to Western Paper Box Co., April 4, 1922.—A. P.-C.

Method of Making Tapered Paper Containers.—U. S. Patent 1,413,251, M. D. Baron, assignor to Wittenman Brothers, April 18, 1922.—Tapered articles are made by winding a straight web of paper, to which adhesive has been applied, on a tapered mandrel; but, either before or during drying, tucks or folds are formed in the web at the small diameter of the mandrel to compensate for the decrease in diameter.—A. P.-C.

Window-Envelope Making Machine.—U. S. Patent 1,411,369, C. M. Neuner, April 4, 1922.—A. P.-C.

Corrugated Paper Tubing.—U. S. Patent 1,412,018, E. Keller, April 4, 1922.—A. P.-C.

General Equipment

Use of Air in the Paper Industry.—(J. O. Ross). See K.

Power Generating and Equipment

Electric Steam Boilers in the Paper Industry.—J. M. De Portenmont. *Papier*, xxx, 165-167 (April, 1922).—Brief discussion of the merits of electric steam boilers, with a description of the Bergeon-Frédet boiler. (See G. A. Maillet, this journal, lxxiii, No. 19, p. 78, No. 21, p. 50, Nov. 10 and 24, 1921).—A. P.-C.

The Power Plant of the Paper Industry.—A. G. Darling and H. W. Rogers. *PAPER TRADE J.*, lxxiv, No. 15, 179-183 (April 13, 1922); *Paper Mill*, xlv, No. 14, 60 j, l, n (April 15, 1922); *Paper*, xxx, No. 17, 20-24 (April 19, 1922); *Paper Ind.*, iv, 87-90 (April, 1922). An analysis of the heat and power demands in a pulp or paper mill and of the various methods which can be employed to balance the two requirements so as to obtain maximum efficiency and lowest cost.—A. P.-C.

Hydro-Electric Development as Applied to the Pulp and Paper Industry.—W. L. Barrows, H. S. Taylor, Ltd., Montreal. *Pulp and Paper*, xx, 175-176 (March 9, 1922); *Paper*, xxx, No. 2, 7-9 (March 15, 1922).—A discussion of the problems arising in the installation of a power development to supply either an existing plant or one that is to be built, showing how the demands on such a plant are very much different from those on almost all other power stations.—A. P.-C.

General

Sales Methods in the Paper Industry.—Harry R. Wellman. *Paper*, xxx, No. 9, 7-10 (May 3, 1922).—A discussion of present methods of distribution in the paper industry, which are shown to be archaic, with a plea for much-needed reforms in this field.—A. P.-C.

The Salesman as an Evangel for Good Business.—Laurence H. Sloan. *Paper Mill*, xlv, No. 14, 65-66, 80 (April 15, 1922); *Paper*, xxx, No. 7, 68-70 (April 19, 1922); *Paper Ind.*, iv, 76-78 (April, 1922).—A discussion of the importance for salesmen to study general business conditions, more particularly as a means of inspiring confidence in those with whom they deal and thus obtaining more business.—A. P.-C.

Pulp and Paper Manufacture in Finland.—*Paper*, xxx, No. 8, 11-12 (April 26, 1922).—Brief review of the history and present status of the pulp and paper industry in Finland.—A. P.-C.

Paper at Its Lowest Level.—R. P. Andrews. *Paper*, xxix, No. 25, 9-10 (Feb. 22, 1922).—An analysis of conditions in the paper market and printing industry.—A. P.-C.

Power Costs in Paper Mill Accounting.—B. C. Gause. *Paper*, xxix, No. 26, 7-8 (March 1, 1922).—A brief discussion of the importance of ascertaining the correct power cost for inclusion in the detail cost of manufacturing.—A. P.-C.

Paper Pulp Strip Producing Machine.—U. S. A. Patent 1,411,030, C. Issenmann, March 28, 1922.—The strips of paper (for spinning) are reeled up directly from a moving surface of the paper machine, e. g., from the strip distributing cylinder or from the felt apron or from an intermediate carrier roll, which contacts with the moving surface of the machine and also with the spool. The rotation of the spool or reel is obtained by direct contact with the strip carrier of the paper machine.—A. P.-C.

Thread Paper.—*Kunststoffe*, x, 86-89 (1920); *Chem. Abs.*, xv, 3395 (Oct. 10, 1921).—Some 33 uses are given for paper which is reinforced by the use of threads or wire.—A. P.-C.

Paper Tape and Process of Making It.—U. S. A. Patent 1,410,745, B. W. Gates, March 28, 1922.—The edges of a flat strip of paper of suitable quality are rolled repeatedly upon themselves inward and backward, thus narrowing the strip to a fraction of its original width. The narrowed tape with rolled edges is then crushed while under tension and finally subjected to a very high pressure, the edges being restrained to prevent them from spreading.—A. P.-C.

Machine for the Manufacture of Foldable Paper or Card-board Boxes.—Fr. Patent 532,558, M. Chambon, *Papeterie*, xlv, 261-262 (March 25, 1922).—A. P.-C.

Method of Making Paper Containers.—U. S. A. Patent 1,413,759, A. Moore, assignor to Clarke-Moore Corporation, April 25, 1922.—A. P.-C.

Paper Box for Holding Tobacco, Etc.—U. S. A. Patent 1,406,707, F. J. Wiesmann, assignor to Weis Fiber Container Co., Feb. 14, 1922.—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals From Which Abstracts Have Been Prepared For This Issue.

Analyst. The Analyst. 195 Victoria St., London, S. W. 1, England.

Ber. Berichte der deutschen chemischen Gesellschaft. F. Oppenheim, Lohmthienstr. 67, Berlin, S. O. 36, Germany.

Brit. J. Phot. British Journal of Photography. Henry Greenwood & Co., 24 Wellington St., Strand, London, W. C. 2, England.

Cellulosechem. Cellulosechemie. Otto Elsner, Oranienstr. 140-142, Berlin, S. 42, Germany.

J. Soc. Chem. Ind. Journal of the Society of Chemical Industry. Central House, 46 and 47 Finsbury Square, London, E. C. 2, England.

J. Soc. Dyers Col. Journal of the Society of Dyers and Colourists. Pearl Assurance Bldgs., Market St., Bradford, England.

Paper Paper. 251 West Nineteenth St., New York City.

Paper Ind. The Paper Industry. 356 Monadnock Block, Chicago, Ill.

Paper Mill. The Paper Mill and Wood Pulp News. L. D. Post, Tribune Building, 154 Nassau St., New York City.

Paper Trade J. Paper Trade Journal. 10 East Thirty-ninth St., New York City.

Papeterie La Papeterie. 9 Rue Lagrange, Paris (5°), France.

Papier Le Papier. 16 Rue du Rocher, Paris (8°), France.

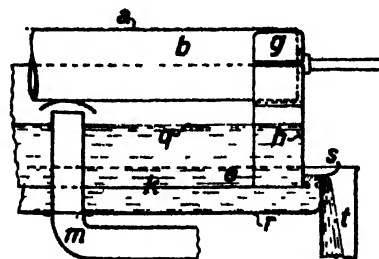
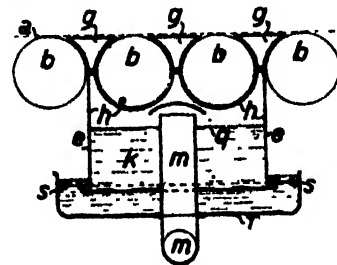
Pharm. Weekblad. Pharmaceutisch Weekblad. D. B. Centen, Amsterdam, Holland.

Pulp and Paper. Pulp and Paper Magazine of Canada. Gardenvale, Que., Canada.

Suction Box for Paper and Pasteboard Machines

The apparatus, which is shown in the accompanying cut, was patented in Germany, being Patent No. 350,000, May 2, 1920. It shows a particular type of suction box construction for paper and pasteboard making machines and likewise for apparatus used to remove water from cellulose materials.

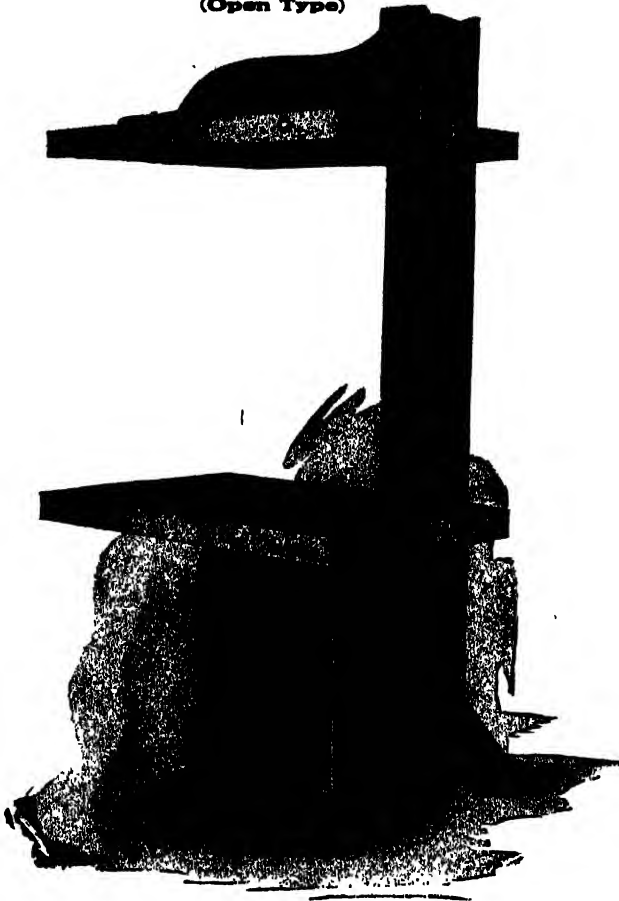
The top figure is a cross-section of the machine while the lower figure is a longitudinal view. The frame of the box is connected



in an air-tight connection with the rest of the apparatus. The longitudinal walls *e* are connected in this manner with the carrying rolls *b* and similarly the end walls *h* are fixed to the ends of these rolls. The walls *e* and *h* dip into a liquid *q*, in order to provide a water seal. A trough *r* with an overflow arrangement *s* and outlet pipe *t* is located under the walls of the box. The side walls *h* can be made stationary in all parts or else just in the lower part. The upper part *g* may be made removable. This suction box is subjected to air pressure stress in the vertical direction and is only partly so stressed in the horizontal direction. For this reason it is very easy to equalize the slight horizontal air pressure stress by the use of horizontal strips, which are arranged between the longitudinal walls of the box. It is possible to cover quite a number of rolls with this suction box and in this way secure a high efficiency, without it being necessary to use a box of heavy construction. This type of box has just two longitudinal openings which must be packed air-tight and consequently only a small amount of work need to be done to suck the air out of it.

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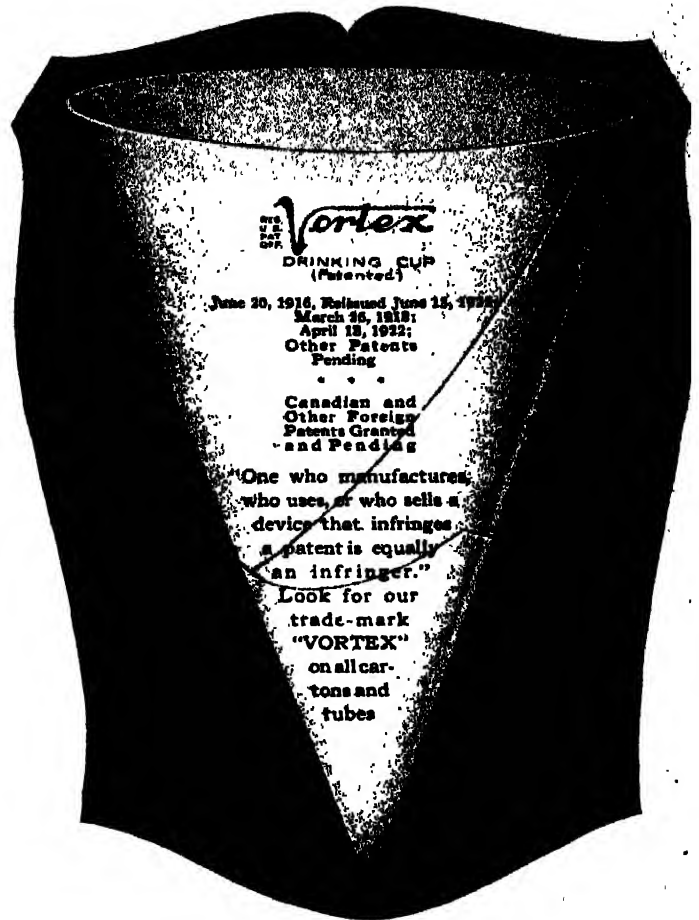
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To Prevent Stock Slipping on Cylinder Machine

Question No. 2561.—We are making 12-pound tissue on a cylinder machine. Whenever the speed exceeds 140 feet per minute the stock slips or falls back on the mold.

Any suggestions as to overcoming this trouble will be greatly appreciated.

The cylinder mold is 30" in diameter and the coucher is 12" in diameter. Soft rubber wrapping is used. The slice board is about 1½" back and appears to be working O. K. The center of the coucher is 4" over the center of the mold.

The felt is pitched towards the coucher. Back of the mold in vat is kept free of thick stock. Stock used is white shavings, white cuttings, and sulphite. The coucher is a cast shell covered with rubber about 1" thick and fairly soft.

Answer No. 2561.—According to the conditions you have stated in your question your mechanical conditions are all right. To all appearances your coucher is set all right in regard to the mold and the way your felt is pitched is all right. The main thing to keep the stock from slipping from the mold is to keep the suction in your mold high enough. Of course a lot depends on how your stock comes to the mold. If the stock is beaten up in the beater to such an extent that it comes to the mold in a slippery condition you must have more suction in the cylinder than when the stock is beaten up a shorter time and is not slippery. The best advice under the conditions in this case is to speed up your pump that takes away the water from the inside of your cylinder. By putting in a larger pump you can run it slower and at the same time get a greater suction on the mold. If you have not reached the capacity of the present pump, speed it up and get a greater suction on the mold and you will doubtless find that you will eliminate your present troubles.

Notable Progress in Forestry

KLEINF, N. H., September 5, 1922.—"The past two years have seen notable progress in public appreciation of the necessity for making the timberlands of the United States continuously productive," said R. S. Kellogg, chairman of the National Forestry Program Committee, speaking today before the Annual Meeting of the Society for the Protection of New Hampshire Forests, "and tangible results are being steadily achieved upon the basis of federal leadership and co-operation with the states. Despite the very proper efforts at Washington to reduce expenses, Congress made a substantial appropriation last spring for the continuing of purchases of land for national forests in the East, because it was recognized that such purchases are not an item on the expense side of the national ledger, but are really and truly an investment in the future welfare and prosperity of the entire country. More than to any other one influence is credit due to the Society for the Protection of New Hampshire Forests and its untiring Forester, Philip W. Ayres, for keeping this viewpoint before the people until Congress could not escape its duty to make the purchase

policy a fixed feature of the national budget. Purchases since the inauguration of this policy in 1911 have exceeded 440,000 acres in the White Mountains and 1,600,000 in the southern Appalachians and there are still large areas upon the watersheds of navigable streams which must be protected by the extension of this policy of conservation through wise use of our natural resources.

"The problem of our timber supply is a many-sided one," said Mr. Kellogg. "The magnitude of it is so great as to require the utmost practical efforts of the States and of the National Government for years to come, in order that our 400 million acres of potential forest land may permanently yield the quantity and variety of products required for a nation at present numbering 110 million souls, and which the children of today may see grow to 200 million.

Four Cardinal Points

"There are four cardinal points in any adequate program of forest conservation. These are:

First: Fire prevention which is an absolutely essential requirement for the protection of the existing supply of mature timber and of the young growth which will furnish the timber of a few years hence. No other forestry measure, however desirable, can be carried out until protection from fire is assured.

Second. Forest planting upon a greatly enlarged scale is necessary, in order to restore millions of the acres of barren land to productivity.

Third: Forest research and investigation must be maintained and enlarged, so that we may determine the best methods of reproducing the most valuable species and the most economical means of utilizing all species.

Fourth: Purchases of forest land by the National Government, by the States and Municipalities must be continued until our nucleus of national forests originally created by the withdrawal of public lands from entry or sale is brought up to a total of publicly owned forests, comprising not less than 35 or 40 per cent of our total forest area. This is necessary not only for the protection of watersheds but also to furnish the backbone and reserve of the nation's timber supply, for only through publicly owned forests will it be possible to grow an adequate amount of the larger sizes and older timber which must always be an essential part of our supply.

States Responding Splendidly

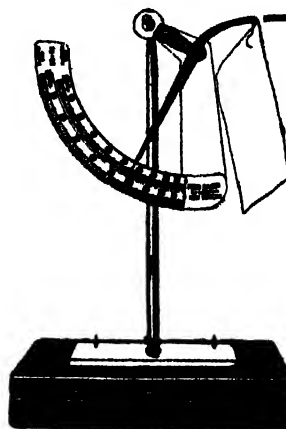
"The States are responding splendidly to the demands of the situation. Much is yet to be done, but progress is being made. It is especially encouraging to note the recent designation of a special forestry sub-committee of the Committee on Agriculture of the House of Representatives, which is expected to study the testimony given at the Hearings during the past two years and to recommend national legislation that will enable the Department of Agriculture through the Forest Service to go steadily forward in its leadership in the solution of one of our most presuming internal problems."

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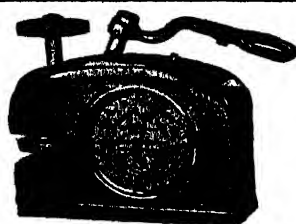
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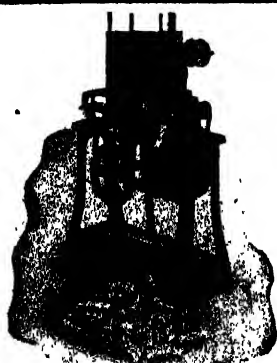
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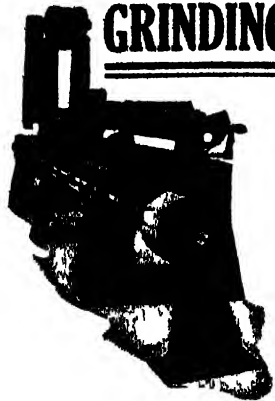
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THE PAPER OUTLOOK IN JAPAN

OSAKA, July 17, 1922.—On looking over the statement of sales and output of the Paper Manufacturers' Association it will be observed that sales exceeded production by about 5,000,000 pounds monthly since last September. Japan's paper supplies have decreased correspondingly, only 78,900,000 pounds of paper being on hand at the end of May last, while 130,000,000 pounds has heretofore been considered an enormous reserve. Viewed in this light, the paper market seems to have improved greatly. June 20 members of the Paper Manufacturers' Association held a conference and decided upon the following program:

(1) A ten per cent curtailment of production shall be continued up to September 1, 1922

(2) All other paper machines recently installed with the exception of that in the Jujo factory, belonging to the Oji Paper Mill, shall not be run.

In the first place, the former curtailment of production should have been revoked earlier, but in view of the unsettled state of the paper market this was not realized until February of this year. In March a ten per cent reduction was adopted and was to be discontinued entirely in May but circumstances did not permit this policy to be carried out. Further, it is unofficially understood that this ten per cent reduction will continue in effect for some time after August. Although some members of the Association insist upon discontinuing the present reduction system on the ground that the paper market has picked up recently, still it is doubtful whether or not any new machines have been installed. This is simply because the capacity for paper production in our country has been increasing rapidly in recent years.

Machines and Production

The following is a list comparing the number of machines belonging to members of the Association with the output since 1914:

Years	No. of Machines Run.	Inches.	Production in Units of 1,000 Lbs.	Per cent of Increase over Preceding Year.
1914	56	5,214	327,614	1.08
1915	58	5,354	367,579	1.23
1916	66	6,123	405,468	1.03
1917	74	6,787	455,000	1.23
1918	78	7,170	498,965	.93
1919	82	7,522	519,142	.42
1920	78	7,434	559,835	.77
1921	82	7,690	534,450	X .44 (per cent of decrease.

(Note: "Number of Machines Run" and "Inches" are computed at the end of each year.)

As will be seen in the above list, the number of machines run and the total production increased steadily from 1914, when the European War broke out, until 1919. In the year 1920, the number of machines was reduced but production increased about 77 per

cent over the preceding year. In 1921, last year, there were as many running as in 1919, but in point of production there was a decrease of 44 per cent, the reason being that throughout Japan there was a 20 per cent curtailment in the use of printing paper and four leading factories, Fuii, Oji, Chuo and Kyushu reduced their stocks to the extent of 1,350,000 pounds monthly in news print, match paper, colored paper and wrapping paper.

Manufacturing Capacity Increases

Manufacturing capacity is, however, on the increase and although it will be impossible to estimate exactly at present, the approximate capacity may be computed. The following list shows number of machines and their capacity in inches, as owned by members of the Association today:

Mills.	Machines.	Inches.
Oji Paper Mill.	26	2,508
Fuji	32	3,071
Mitsubishi	12	975
Kyushu	6	600
Chuo	5	464
Kokura	4	412
Hokuetsu	5	426
Umeza	3	262
Kumano	2	172
Karafuto Kogyo	3	292
Nakanoshima	1	60
Yuko (Aritsume)	1	60
Total.	100	9,302

From this it will be seen that if all mills are run to their full capacity monthly production will amount to roughly 65,000,000 pounds, or 780,000,000 pounds in a year. If this is compared with production in 1919 an increase of about 50 per cent will be noted.

Today the total consumption of paper in our country amounts to supply of 220,000,000 pounds, or 39 per cent (See production table.)

No Dumping of Canadian News Print

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 5, 1922.—It is understood that a preliminary report will be sent to the Secretary of the Treasury in the very near future by the Customs Service, in which it will be shown that there is no dumping of Canadian news print paper on the American market. A prediction that no dumping would be found has already been published in the PAPER TRADE JOURNAL and while it is possible a fuller report will be made later on the subject to the Secretary of the Treasury, it is a foregone conclusion that no dumping will be found. When a final report on this subject is made no further investigation of dumping of any kinds of paper products on the American market will be before the Customs Service.

Unit—1,000 lbs.

Year	Production	Bro't for'd from preceding year	Imports	Total	Exports	Carried to next year	Total	Demand	Per cent of increase over preceding year
1904	129,215	.....	34,046	163,261	11,014	.....	11,014	152,247	...
1905	134,441	.....	76,336	210,777	11,042	.....	11,042	199,735	3.14
1906	132,432	.....	79,257	211,689	19,396	.....	19,396	192,293	Δ.35
1907	147,296	.....	89,890	337,186	14,041	.....	14,041	223,142	1.60
1908	148,647	.....	63,052	211,699	9,788	.....	9,788	201,911	Δ.95
1909	162,104	.....	90,925	253,029	7,073	.....	7,073	245,956	2.20
1910	191,591	.....	92,873	284,414	14,247	.....	14,247	234,167	Δ.47
1911	228,163	.....	74,002	302,165	9,566	31,127	40,693	261,472	1.16
1912	251,337	31.127	77,214	359,678	13,462	27,674	41,136	318,542	2.20
1913	295,893	27.674	80,038	403,605	13,794	31,907	45,701	357,904	1.24
1914	327,614	31.907	54,190	413,711	14,406	40,482	54,888	358,823	.02
1915	367,579	40.482	27,068	435,129	26,937	51,352	78,289	356,840	Δ.33
1916	405,468	51.352	35,694	492,514	55,427	65,476	120,903	371,611	.40
1917	455,000	65.476	16,637	537,113	69,485	74,349	143,834	393,279	.58
1918	489,965	74.349	34,277	607,591	72,815	107,053	179,868	427,723	.88
1919	519,142	107.053	56,303	682,498	66,352	106,644	172,996	509,502	1.92
1920	559,835	106.644	56,879	723,358	51,049	130,568	181,637	541,721	.62
1921	534,450	130.568	45,683	710,721	60,937	87,529	148,466	562,255	.38

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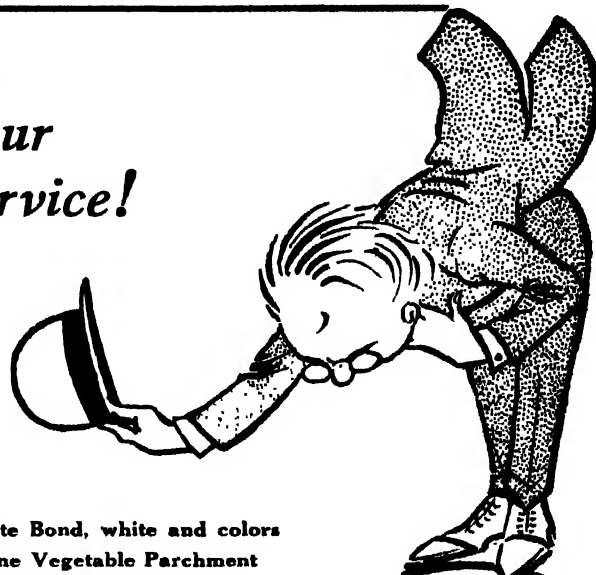
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Trade Marks Department

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The following are trade-mark applications pertinent to paper and pulp filed pending in the United States Patent Office which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade-Mark Company, Barrister building, Washington, D. C., or Bush building, 130 West Forty-second street, New York, trade-mark specialists.

As an additional service feature to its readers, the PAPER TRADE JOURNAL gladly offers to them an advance search free of charge, on any mark they may contemplate adopting or registering.

"JUSTWUN"—No. 165,573. United States Paper Mills, Inc., Chambersburg, Pa., and New York City. For paper toweling and paper napkins.

GEVAERT—No. 158,862. Gevaert Photo Pro-Dukten, Oude-God, near Antwerp, Belgium. For sensitized photographic papers.

ARTOS—No. 158,863. Gevaert Photo Pro-Dukten, Oude-God, near Antwerp, Belgium. For sensitized photographic papers.

TWO PICTURES—Representing labels, one marked T. P. C. and one bearing words Braunstein Freres, below head in frame. No. 152,190. Societe Anonyme des Anciens Etablissements, Braunstein Freres, Paris, France. For cigarette paper.

Try the Drugg Store First—No. 161,295. Blake, McFall Company, Portland, Ore. For bond paper for printing, writing, and wrapping purposes.

Flex-a-Tile—No. 131,578. The Heppes-Nelson Roofing Company, Chicago. For building paper.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., August 30, 1922.—The Purchasing Officer of the Government Printing Office has received the following bids:

1,300 lbs. green H. M. F. writing paper, 22x24—26: Strathmore Paper Company, \$.23 per pound; R. P. Andrews Paper Company, \$.1865; The Whitaker Paper Company, \$.172; Old Dominion Paper Company, \$.1398; Whiting Patterson Company, \$.1444; Mathers-Lamm Paper Company, \$.16; D. L. Ward Company, \$.20.

1,075 lbs. Safety M. F. green writing paper, 21x32—43: R. P. Andrews Paper Company, \$.2558; Dobler & Mudge, \$.2545; Geo. LaMonte & Son, \$.238; Perfect Safety Paper Company, \$.26; H. P. Andrews Paper Company, \$.15; Keystone Paper Company, \$.30.

9,500 lbs. kraft wrapping paper, 27x38—95, and 7,000 lbs. kraft wrapping paper, 27x38—70: D. S. Walton & Co., \$.07 per pound; The Whitaker Paper Company, \$.0727; R. P. Andrews Paper Company, \$.069; Carter, Rice & Co., \$.0775; Old Dominion Paper Company, \$.0898; Wilkinson Bros. & Co., \$.0558; Maurice O'Meara Company, \$.0725; Whiting-Patterson Company, \$.0673; Keystone Paper Company, \$.0673; Union Bag and Paper Corporation, \$.065.

6,700 lbs. rope manila paper, 38x38—134 and 14,800 rope manila paper, 24x38—148: The Whitaker Paper Company, \$.1197; Dobler & Mudge, \$.12; R. P. Andrews Paper Company, \$.0947.

4,800 lbs. dark blue smooth cover paper, 20x25—48: Knowlton Brothers, \$.0894 and \$.0844; R. P. Andrews Paper Company, \$.0848 and \$.0808; The Whitaker Paper Company, \$.0844 and \$.0829; Dobler & Mudge, \$.0858; Mathers-Lamm Paper Company, \$.0854 and \$.0839; Geo. W. Millar & Co., Inc., \$.0925; Old Dominion Paper Company, \$.0864 and \$.0854; Thos. Barrett & Son, \$.096; and Keystone Paper Company, \$.11.

1,750,000 lbs. white M. F. printing paper, No. 1, basis 25x38—35 in 18, 19, 21, 23, 38 and 48 inch rolls: Dobler & Mudge, (400,000 lbs. only), \$.0647 per pound; International Paper Company (1,244,186 lbs.), \$.0675; Old Dominion Paper Company, \$.08202; R. P. Andrews Paper Company, \$.0674.

10,400 lbs. India tint coated cover paper, 26½x41—104: D. L. Ward Company, \$.1125; Dobler & Mudge, \$.095; R. P. Andrews Paper Company, \$.1017 and \$.1022; Old Dominion Paper Company, \$.1489; Thos. Barrett & Son, \$.1085.

1,275 lbs. 17x28—25½ lbs. No. 20, Yellow Glazed Bond Paper: The Aetna Paper Company at \$.1736 per lb. and Old Dominion Paper Company at \$.1674.

7,500 lbs. 26x38—No. 50, Lined Strawboard: Philip Rudolph & Son, Inc., \$.0441 per lb. and R. P. Andrews Paper Co., \$.0332.

1,000 sheets Cloth Lined Paper, white, 24x36—108: The Whitaker Paper Company at \$137.50 per M sheets; R. P. Andrews Paper Company, \$129.00; Dobler & Mudge, \$100.00; Mathers-Lamm Paper Company, \$170.00; Nashua Gummed and Coated Paper Company, \$160.00; Great Notch Paper Company, \$142.75; Beekman Paper and Card Company, \$125.00, and C. J. Vanella & Co., \$117.00.

160,000 lbs. 25x30 binder's board: R. P. Andrews Paper Company, at \$.0408 per pound; The Republic Bag and Paper Company, \$.04315; Dennison-Pratt Paper Company, \$.06443; Mathers-Lamm Paper Company, \$.03655; The Whitaker Paper Company, \$.04045; Kerr Paper Mill Company, \$.0375.

Bids will be opened on September 11 for the following:

320,000 lbs. 24x36—32, white news print.

40,000 lbs. 24x36—80, high finish sulphite manila paper.

300,000 lbs. 25x38—35, No. 1 white machine finish printing.

4,000 lbs. 24x36—70, rope manila paper in 11½-inch rolls.

The R. P. Andrews Paper Company has been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 4,800 lbs. (100 reams) of 20x25—48 dark blue smooth cover paper at \$.0808 per pound, bids for which were opened on August 21.

Wilkinson Brothers Company has been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 16,500 lbs. (200 reams) of various sizes kraft writing paper at \$.0658 per pound.

Dobler & Mudge will furnish 10,400 lbs. (100 reams) of 26½x41—104 India tint coated cover paper at \$.095 per pound. Bids for these items were opened on August 21.

The R. P. Andrews Paper Company has been awarded the contract by the purchasing officer of the Government Printing Office for furnishing 7,500 pounds (7,500 sheets) of 26 x 38—No. 50, lined strawboard at \$.0332 per pound, bids for which were opened on August 25.

R. M. Myers & Co. Put Out New Cabinet

ROCHESTER, N. Y., September 5, 1922.—R. M. Myers & Co. are now distributing their new sample cabinets of fine papers.

The cabinet is a handsome piece of office furniture, in quartered oak, 16 inches long, 10 inches high, and 12 inches deep. Simplicity has been the keynote in the designing and construction of this cabinet. The whole cabinet and samples are arranged for the utmost convenience and ready reference of paper buyers.

Sample books lie in racks with ample room for expansion. The drawer on the left contains samples of card stock and blotting. The middle compartment holds a neatly arranged portfolio of envelope announcement and ruled goods samples. The drawer at the bottom provides space for printed specimens of their papers.

The sample books themselves measure 4¼x8, none of them too bulky for convenient handling. Each book bears a handsome cover design in colors, a distinctive color arrangement for each book.

An important feature of this cabinet is that every item of stock displayed is carried in Rochester. This is not a cabinet of mill stocks, nor does the Myers price list give such items.

The products of the following well-known paper manufacturers are displayed in this new cabinet: American Writing Paper Company, Louis De Jonge & Co., L. L. Brown Paper Company, Strathmore Paper Company. The Brown Company, Portland, Me.; Esleek Manufacturing Company, Tileston & Hollingsworth Company, Martin Cantine Company, Hampden Glazed Paper and Card Company, Chemical Paper Company.

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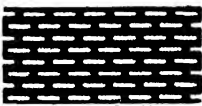
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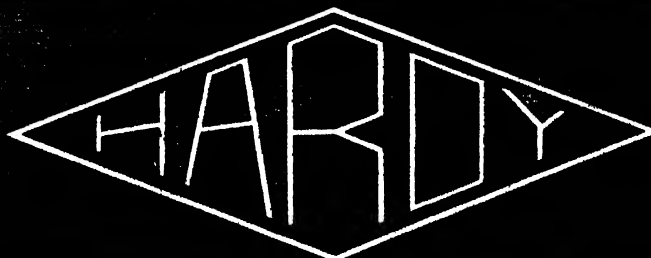
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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, September 6, 1922.

While there does not appear to be any drastic transition between the type of business consummated in the latter part of August and that of the first week in September, still there seems to be something in the general undertone of the market that stiffens up and asserts itself with the advent of the fall months. The fall is usually a period of prosperity for paper men. There is every reason in the world why this particular fall should be unusually profitable for every branch of the industry.

Perhaps fifty per cent of the paper men of the country are already enjoying excellent business. In a few lines the chief difficulties lie only in the ability of the producer to produce—and to ship. Many are sold up for the next two or three months and their least concern at present is the source of future orders. In those lines where the demand has not yet caught up with production, there has been a decidedly better feeling within the last few weeks, and what with the exigencies created by the several strikes together with approaching fall business, shelves and stockrooms that have been depleted for many months are now being dusted off and laden with paper supplies. The late summer has witnessed a gradual but steady metamorphosis in the nature of the market. From a buyers' market in early June has evolved a market in which the seller holds sway in early September. Consumers have swept the cobwebs from their storeroom shelves—but it's not quite so easy to fill those shelves as it might have been several months ago.

That 1922 will go down in history as a boom year in the consumption of news print paper is now generally agreed. With each succeeding quarter a few skeptics insisted that there would be an appalling "let down" within the next few weeks. The phenomenal business which came during the "dry" months they attributed to an artificial strike demand. Recent statistics, however, are apt to discourage the most confirmed pessimist, for there has been an increase of 27 per cent in the production of United States and Canadian companies for the first seven months of this year, as compared with that of the same period for 1921. Moreover, July's average daily production of news print paper amounted to 93.6 per cent of the average daily output during the three months of greatest production either in 1920 or 1921. In news print circles higher prices are looked for in the last quarter of this year.

Book paper prices continue withdrawn and manufacturers are reported to be deluged with inquiries and orders. Available stocks are going into consuming channels as rapidly as producers can secure shipping facilities, and production is still hampered to a great extent by the paucity of coal supplies. It is generally conceded that six weeks to two months will be required before the effects of the coal settlement will reach the various mills.

While it remained almost inert during the period when it was most needed, in mid-summer, the export demand for fine paper of nearly all grades is now asserting itself vigorously. Producers in the east have found it advisable to withdraw all quotations during the present disturbed economic conditions, but they have been catering to a top-heavy demand as fast as invoices could be made out and the commodity shipped.

With the fall's clothing business impelling all tissue dealers to stock up to the limit, producers are running full-blast to keep anywhere near abreast of the volume of orders. Manufacturers still refuse to quote a fixed market price on any of their products due to the uncertainty which attaches to the fuel situation as well as to the doubtful element of rail transportation.

Wrapping paper is firming up considerably and the general tone of the kraft market is much stronger than it has been in several months. Prices exhibit a tendency to rise in proportion to the

paper market as a whole, and reports show that manufacturers of wrappings are not any too anxious to sell at the current prices.

The withdrawal of board prices has now become unanimous the Country over, and from the way prices are soaring a situation not unlike that of war-time days appears to be imminent. The chief consolation of consumers lies in their knowledge that the present advances cannot be lasting ones, but that they are merely a medium to enable board manufacturers to produce at all under the trying circumstances with which they are confronted.

Mechanical Pulp

The news print industry has been making deep dents into the available supplies of ground wood of late, and board manufacturers have demanded their share of mechanical pulp, with the result that prices in this market are firming considerably. No pronounced shortage has yet become apparent in ground good circles, but activity is increasing almost daily and business is generally in an exceedingly healthy condition.

Chemical Pulp

No. 1 domestic bleached sulphite is in excellent demand and consumers are paying 4.25 cents a pound and better at the plant without hesitation. The market for nearly every grade of chemical pulp is still quite firm, and the strengthening of European primary markets has given importers grounds for optimism. Pulp mills in this country are operating capacity for the most part and their production for the next sixty to ninety days has been contracted for. The coal shortage is expected to bring prices to a slightly higher level.

Old Rope and Bagging

A fair amount of activity was registered in the old rope market during the past week, No. 1 Manila rope still holding in the neighborhood of 5.75 to 6.00 cents a pound, f. o. b. shipping point. Mixed strings have remained fairly steady in point of demand, and while sellers are quoting as high as 90 cents to \$1 per cwt., dealers are often able to better this figure. Roofing is still the highlight in the bagging market, although there is a firming tendency in nearly every grade.

Waste Paper

The price stiffening which was inaugurated in the waste paper market several weeks ago has continued through the past week and no immediate signs of a let-up are in view. Despite the beneficial effect of the coal settlement in this market, the demand has not relaxed for a moment and packers have had their hands full in taking care of the great volume of business. Dealers are not inclined to take orders for large tonnages to be shipped at a date very far in the future and are, for the most part, guiding their purchases by actual orders in hand. Shavings, ledgers and writings, book stock, new manila cuttings and old kraft stock have all been in very good demand and have enhanced in price.

Rags

The market for cotton rags has been strengthening steadily for some weeks, and dealers believe this condition will obtain throughout the fall season. Roofing rags are still in greatest demand, but whites have remained firm and the various specialty grades have been moving well with prices tending upward. Both dealers and packers are safeguarding themselves in rag purchases, as they anticipate a considerably higher scale of prices to rule in the near future.

Twine

Although no price advances were noted during the past week in the twine market, dealers appeared to be holding off to a certain extent in anticipation of the expected rise. Due to the fact that the demand for all grades of twine has picked up in recent weeks dealers feel that they are justified in looking for better prices as soon as fall business gets under way.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations September 5, 1922:

	BID	ASKED
American Writing Paper Company, pref.....	31 1/2	31 3/4
International Paper Company, com.....	60 1/4	60 1/2
International Paper Company, pref., stamped.....	71 1/4	72
Union Bag & Paper Corporation.....	74	75

Paper

F. o. b. Mill.

Ledgers		
Bonds		
Writings—		
Extra Superfine..	All quotations withdrawn	
Superfine		
Tub Sized		
Engine Sized		
News—f. o. b. Mill—		
Rolls, contract...	3.75 @ 4.00	
Rolls, transit...	4.00 @ —	
Sheets	4.00 @ —	
Side Runs	3.25 @ 3.50	
Book, Cased—f. o. b. Mill		
S. & S. C.....		
M. F.....	All quotations withdrawn	
Coated and Enamel		
Lithograph		
Tissues—f. o. b. Mill		
White, No. 1.....	All quotations withdrawn	
Colored		
Anti-Tarnish		
Silver Tissue		
Manila		
Kraft—f. o. b. Mill—		
No. 1 Domestic.....	7.00 @ 7.50	
No. 2 Domestic.....	5.50 @ 6.25	
Imported	6.00 @ 6.25	
Screenings	2.75 @ 3.50	
Manila—		
No. 1 Jute.....	8.50 @ 9.00	
No. 2 Jute.....	7.75 @ 8.50	
No. 1 Wood.....	4.50 @ 5.50	
No. 2 Wood.....	4.00 @ 4.50	
Butchers	4.25 @ 4.75	
Fiber Papers—		
No. 1 Fiber.....	6.00 @ 6.25	
No. 2 Fiber.....	5.00 @ 5.25	
Common Bogus.....	2.50 @ —	
Card Middles	4.00 @ 5.00	
Boards—per ton—		
News		
Straw		
Chip		
Binders' Board	All quotations withdrawn	
Spl. Mla. L.Chip.....		
Wood Pulp.....		
Container		
Wax Paper—		
Self Sealing White		
28 and 30 lb.		
basis	10.00 @ 11.00	
Waxed Tissue.....	1.40 @ 1.60	
Glassine—		
Bleached, basis 25		
lbs.	All quotations withdrawn	
Bleached, basis 20		
lbs.		

Mechanical Pulp

(Ex-Dock.)

No. 1 Imported	32.00 @ 36.00
No. 1 Domestic.....	28.00 @ 32.00

(F. o. b. Pulp Mills.)

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	4.30 @ 4.50	
Easy Bleaching	2.85 @ 3.10	
No. 1 strong unbleached	2.50 @ 2.75	
No. 2 Strong unbleached	2.25 @ 2.50	
No. 1 Kraft.....	2.70 @ 3.00	
Sulphate—		
Bleached	3.90 @ 4.00	
Sulphite (F. o. b. Pulp Mill.)		
Bleached	4.00 @ 4.50	
Strong unbleached	2.60 @ 2.80	
Easy Bleaching		
Sulphite	2.70 @ 3.10	
News Sulphite.....	2.50 @ 2.80	
Mitcherlich	2.75 @ 3.05	
Kraft (Domestic)	2.50 @ 3.00	
Soda Bleached.....	3.75 @ 4.00	

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	11.25 @ 11.75	
New White, No. 2	6.50 @ 7.00	
Silesias No. 1.....	6.25 @ 6.75	
New Unbleached	9.00 @ 9.50	
Washables	4.00 @ 4.25	
Fancy	5.00 @ 5.50	
Cotton—according to Grades—		
Blue Overall	6.00 @ 6.25	
New Blue	4.75 @ 5.00	
New Black Soft	5.50 @ 6.00	
New Light Sec-		
onds	2.75 @ 3.00	
O. D. Khaki Cut-		
tings	3.75 @ 4.25	
Men's Corduroy	2.75 @ 3.00	
New Canvas	7.00 @ 7.25	
New Black Mixed	2.50 @ 2.75	
Old		
White, No. 1—		
Repacked	6.50 @ 6.75	
Miscellaneous	5.50 @ 6.00	
White, No. 2—		
Repacked	3.00 @ 3.25	
Miscellaneous	2.75 @ 3.00	
St. Soiled White	1.40 @ 1.50	
Thirds and Blues—		
Repacked	1.75 @ 1.85	
Miscellaneous	1.45 @ 1.55	
Black stockings	2.90 @ 3.25	
Ronring Rags—		
Cloth Strippings	1.25 @ 1.35	
No. 1	1.25 @ 1.35	
No. 2	1.20 @ 1.25	
No. 1 .....	.85 @ .95	
No. 4 .....	.85 @ .95	
No. 5A	1.00 @ 1.10	

Foreign Rags

New Light Silesias	6.00 nominal
Light Flannellettes	6.75 nominal
Unbleached Cottons	7.50 nominal
New White Cut-	
tings	9.50 nominal
New Light Oxford	6.00 nominal
New Light Prints	4.50 nominal
New Mixed Cut-	
tings	2.00 @ 2.50
New Dark Cuttings	1.90 @ 2.10
No. 1 White Linens	9.00 @ 11.00
No. 2 White Linens	6.50 nominal
No. 3 White Linens	5.00 nominal
No. 4 White Linens	3.50 nominal
Old Extra Light	
Prints	2.00 nominal
Ord. Light Prints	1.75 nominal
Med. Light Prints	1.50 nominal
Dutch Blue Cottons	1.85 nominal
German Blue Cot-	
tons	1.50 nominal
Ger. Blue Linens	3.50 nominal
Checks and Blues	1.50 nominal
Dark Cottons	1.20 @ 1.30
Shoppery	1.00 @ 1.05
French Blues	2.00 nominal

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.00 @ 1.10	
Domestic	1.00 @ 1.10	
Wool, Tares, light	1.45 @ 1.55	
Bright Bagging.....	1.10 @ 1.25	
No. 1 Scrap	1.00 @ 1.15	
Sound Bagging .....	.85 @ .95	
Manila Rope—		
Foreign	5.75 @ 6.25	
Domestic	6.25 @ 6.50	
New Bu. Cut.....	2.25 @ 2.45	
Hessian Jute Threads—		
Foreign	2.25 @ 2.50	
Domestic	2.20 @ 2.40	
Mixed Strings .....	.90 @ 1.00	

Twines

Cotton—(F. o. b. Mill)		
No. 1 .....	.35 @ .37	
No. 2 .....	.31 @ .33	
No. 3 .....	.27 @ .29	

India, No. 6 basis—		
Light .....	.20 @ .21	
Dark .....	.19 @ .20	
B. C., 18 Basis .....	.41 @ .42	
A. B. Italian, 18		
Basis .....	.51 @ .61	
Finished Jute—		
Light, 18 basis .....	.26 @ .27	
Dark, 18 basis .....	.29 @ .30	
Jute Wrapping, 3-6		
Ply—		
No. 1 .....	.23 @ .24	
No. 2 .....	.21 @ .22	
Tube Rope—		
4 ply and larger .....	.15 @ .17	
Fine Tube Yarn—		
5-ply and larger .....	.19 @ .21	
4 ply .....	.20 @ .22	
3 ply .....	.20 @ .22	
Unfinished India—		
Ross .....	.16 @ .17	
Paper Makers Twine		
Balls .....	.13 @ .15	
Box Twine, 2 3 ply .....	.18 @ .19	
Jute Rope .....	.21 @ .24	
Amer. Hemp, 6 .....	.33 @ .35	
Sisal Hay Rope—		
No. 1 Basis .....	.15 @ .17	
No. 2 Basis .....	.13 @ .15	
Sisal Lath Yarn—		
No. 1 .....	.14 @ .15	
No. 2 .....	.11 @ .13	
Manila Rope .....	.18 @ .19	

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	4.00 @ 4.25	
Hard, White, No. 2	3.65 @ 3.90	
Soft, White, No. 1	3.60 @ 3.80	
Flat Stock—		
Stitchless	2.00 @ 2.15	
Over Issue Mag.	2.10 @ 2.20	
Solid Flat Book	1.85 @ 2.00	
Crumpled No. 1	1.45 @ 1.50	
Solid Book Ledger	2.25 @ 2.30	
Ledger Stock	1.90 @ 2.00	
New B. B. Chips .....	.65 @ .70	
Manillas—		
New Env. Cut	2.50 @ 2.75	
New Cut No. 1	1.75 @ 2.00	
Extra No. 1, Old	1.55 @ 1.65	
Print	1.05 @ 1.15	
Container Board .....	.90 @ 1.10	
Bogus Wrapper .....	.80 @ .95	
Old Krafts, machine compressed		
Bales	1.85 @ 1.95	
News—		
No. 1 White News	1.80 @ 1.95	
Strictly Occasional .....	.95 @ 1.00	
Strictly Folded .....	.95 @ 1.05	
No. 1 Mixed Paper .....	.90 @ .95	
Common Paper .....	.55 @ .60	

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper		
F. o. b. Mill		
All Rag Bond		
No. 1 Rag Bond		
No. 2 Rag Bond		
Water Marked Sul-		
phite		
Sulphite Bond		
Sulphite Ledger		
Superfine Writing		
No. 1 Fine Writing		
No. 2 Fine Writing		
No. 3 Fine Writing		
No. 1 M. F. Book		
No. 1 S. & S. C. Book		
Coated Book		
Coated Label		
News—Rags, mill	3 1/2 @ 4 1/2	
News—Sheets, mill	3 3/4 @ 4 1/4	
No. 1 Manila	5 1/2 @ 6	
No. 1 Fiber	5 @ 5 1/2	
No. 2 Manila	4 1/2 @ 5	
Butchers' Manila	4 @ —	
No. 1 Kraft	7 @ 7 1/2	
No. 2 Kraft	6 @ 6 1/2	
Wood Tag Boards	4 @ —	
Screenings	2 1/2 @ —	
Boards, per ton—		
Plain Chip		
Solid News		
Manila Lined		
Chip	All quotations withdrawn	
Container Line—		
85 Test		
100 Test		

Old Papers

Shavings—		
No. 1 Hard White	1.50 @ 4.75	
No. 1 Soft Shav.	3.75 @ 4.00	
No. 1 Mixed	2.10 @ 2.20	
No. 2 Mixed	1.75 @ 1.90	
White Envel. Cut		
tings	4.50 @ 4.75	
Ledgers and Writ-		
ings	2.65 @ 2.75	
Solid Books	2.55 @ 2.65	
No. 1 Books, light	2.40 @ 2.50	
Blanks .....	.00 @ 2.25	
Fr. No. 1 Manila	2.40 @ 2.60	
Manila Envelope		
Cuttings	2.40 @ 2.60	
No. 1 Manilla	1.75 @ 2.00	
Folders News (over		
issue)	1.40 @ 1.50	
Old Newspaper	1.35 @ 1.45	
Mixed Paper	1.25 @ 1.50	
Straw Chippings	1.25 @ 1.50	
Pinders Chippings	1.25 @ 1.50	
Kraft	2.40 @ 2.60	
New Kraft Cuts	2.50 @ 2.75	
Roofing Stock, f.o.b.		
Chicago, Net Cash—		
No. 1	33.00 @ —	
No. 2	31.00 @ —	
No. 3	29.00 @ —	
No. 4	27.00 @ —	

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper		
Bonds .....	.10 @ .60	
Ledgers .....	.15 @ .40	
Writings—		
Superfine .....	.15 @ .20	
Extra fine .....	.12 @ .22	
Fine .....	.20 @ .30	
Fine, No. 2 .....	.20 @ .25	
Fine, No. 3 .....	.15 @ .20	
Book, M. F. .....	.06 @ .09	
Book, S. S. & C. .....	.08 @ .15	
Book, Coated .....	.06 @ .15	
Coated Lithograph .....	.10 @ .15	
Label .....	.05 @ .07	
News .....	.12 @ .13	
No. 1 Jute Manila .....	.08 @ .08 1/2	
Manila Sul., No. 1 .....	.07 1/4 @ .08	
No. 2 Kraft	— @ .06 1/2	
No. 1 Kraft	— @ .09 1/2	
Common Bogus .....	.02 1/4 @ .03	
Straw Board		
News Board		
Chip Board		
Wood Pulp Board		
(Carload Lots)		
Binder Boards—		
Per ton		
Carload lots		
Tarred Felts—		
Regular	48.00 @ 50.00	
Slaters	54.00 @ 56.00	

Best Tarred, 1-ply		
(per roll)	1.35 @ 1.50	
Best Tarred, 2-ply		
(per roll)	1.00 @ 1.15	
Best Tarred, 3-ply		
1.50 @ 1.65		

Bagging

F. o. b. Phila.

Gunny No. 1—		
Foreign .....	.75 @ —	
Domestic .....	.70 @ —	
Manila Rope	4.00 @ 4.50	
Sisal Rope .....	.75 @ .80	
Mixed Rope .....	.75 @ .80	
Scrap Burlaps	1.00 @ 1.25	
Wool Tares, heavy	2.80 @ 3.75	
Mixed Strings .....	.75 @ .80	
No. 1, New Lt. Bur-		
lap .....	.75 @ .80	
New Burlap Cut-		
tings	1.75 @ 2.10	

Old Papers

F. o. b. Phila.

Shavings—		
No. 1 Hard	4.00 @ 4.25	
No. 2 Hard	3.50 @ 3.75	
No. 1 Soft White	3.60 @ 3.75	
No. 2 Soft White	2.90 @ 3.05	
No. 1 Mixed	1.50 @ 1.75	
No. 2 Mixed	1.00 @ 1.25	

(Continued on page 66)

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 2, 1922

SUMMARY

News print.....464 rolls
Writing paper.....4 cs.
Printing paper.....4 bls.
Tissue paper.....18 cs.
Cigarette paper.....3,598 cs.
Photo paper.....167 cs.
Wall paper.....1,428 rolls
Miscellaneous paper.....4,584 rolls, 682 rolls

CIGARETTE PAPER

American Tobacco Co., West Eldara, Bordeaux, 1,640 cs.
R. J. Reynolds Tobacco Co., by same, 1,030 cs.
R. J. Reynolds Tobacco Co., West Eldara, St. Nazaire, 760 cs.
De Mauduit Paper Corp., by same, 168 cs.

TISSUE PAPER

F. C. Strype, Baltic, Liverpool, 18 cs.

PRINTING PAPER

Coyle & Grant Co., City of London, Glasgow, 4 bls.

NEWSPRINT

American Woodpulp Corp., Stockholm, Gothenburg, 245 rolls
Chemical National Bank, by same, 219 rolls.

WRITING PAPER

H. Reene Angel & Co., Olympic, Southampton, 4 cs.

PHOTO PAPER

Geneart Co. of America, Gothland, Antwerp, 167 cs.

WALL PAPER

F. G. Prager Co., Gothland, Antwerp, 1,428 rolls.

PAPER

W. Schall & Co., Stockholm, Gothenburg, 80 rolls.
W. Schall & Co., by same, 64 bales.
W. Schall & Co., by same, 402 rolls.
D. S. Walton & Co., by same, 88 bls.
Chase National Bank, by same, 9 bls.
Chase National Bank, by same, 66 rolls.
Equitable Trust Co., by same, 15 rolls.
Equitable Trust Co., by same, 30 bls.
Equitable Trust Co., by same, 1,348 rolls.
Great Notch Paper Co., by same, 157 rolls.
Great Notch Paper Co., by same, 118 bls.
C. K. MacAlpine, by same, 176 bls.
C. K. MacAlpine, by same, 2,504 rolls.
Japan Paper Co., by same, 13 cs.
M. M. Cohen, by same, 97 bls.
M. M. Cohen, by same, 12 rolls.

RAGS, BAGGING, ETC.

American Woodpulp Corp., Eastern Dawn, Rotterdam, 205 bales rags.
R. F. Downing & Co., Pr. Polk, London, 235 bales rags.
G. H. Graves Co., Inc., Baltic, Liverpool, 82 bales bagging.
Equitable Trust Co., by same, 39 bales, bagging.
Albion Trading Co., by same, 119 bales rags.
Guaranty Trust Co., City of London, Glasgow, 92 bales paper stock.
Mechanics & Metals Nat'l Bank, Vandyk, Algiers, 373 bales rags.

WOOD PULP

M. Gottesman & Co., Inc., Stockholm, Gothenburg, 1,335 bales.
Johannesson Wales & Spaire, by same, 1,935 bales.
Scandinavian American Trading Co., by same, 800 bales.
Irving Nat'l Bank, Knut Jarl, Kotka, 976 bales, 163 tons.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 2, 1922

J. A. & W. Beird & Co., Canadian Seigneur, Melbourne, 2,000 bgs. casein.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 2, 1922

H. F. Watson & Co., Sahale, Leith, 314 bales rags.
Certainteed Products Corp., by same, 89 bales rags.
Parsons & Whittemore, Knut Jarl, Kotka, 558 rolls news print
Lagerloef Trading Co., by same, 125 bls. wood pulp boards, 25 tons.
Lagerloef Trading Co., by same, 620 rolls wood pulp, 101 tons.
Living Nat'l Bank, by same, 3,137 bls. wood pulp, 613 tons.
K. F. Hammond, East Side, 1,600 bls. wood pulp, 200 tons.
M. Gottesman & Co., Inc., Arkansas, Christiania, 1,500 bls. wood pulp.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 2, 1922

Guaranty Trust Co., Sahale, Leith, 120 coils old rope.
Guaranty Trust Co., by same, London, 370 bls. rags.
Baring Bros. & Co., Baltic, Liverpool, 127 bls. thread waste.
Castle, Gottheil & Overton, Eastern Dawn, Rotterdam, 1,974 bls. rags.
IN TRANSIT TO TORONTO, CANADA
F. C. Prager Co., Gothland, Antwerp, 437 rolls wall paper.

Southern States Have Paper Manufacturing Future

That the paper industry is more and more turning its attention to the southern pine forests as a future source of raw material for the mills now located in the north, because of the possibility of more economical practice of forestry in those states, and a more rapid production of a timber crop is indicated by an article by Oliver M. Porter, Secretary of the Woodlands Section of the American Paper and Pulp Association, in *The Paper and Pulp Industry*, the monthly publication of the Association. Capt. Porter, as a technical forester, was in France for nearly two years during the war period, getting out fuel wood for the American army, and on his return went to the paper industry as Secretary of the Woodlands Section, which handles the forestry problems of the American Paper and Pulp Association. Lately he has also become Secretary of the Pulp Manufacturers' Association, of which Thomas O. Ross, of the Hummel-Ross Company of Hopewell, Va., is president.

In his technical review of southern forestry possibilities, Capt. Porter makes this conservative statement:

"A survey of the available supplies of spruce, hemlock and balsam pulpwood indicates a rather general shortage of this material, with, unfortunately, only too little definite information and facts as to the location and extent of the remaining pulpwood tracts, and the rate of growth on the lands which have already been cut one or more times for pulpwood, lumber or other forest products. The approaching pulpwood scarcity, together with the supplies of cheap labor and fuel in the South, indicate unusual opportunities for the development of the paper industry and the southern pineries. Foresters who are familiar with the character of tree growth in these regions claim a rotation for the southern pines, at least for pulpwood size, of from fifteen to twenty-five years. This means that under sustained yield management a tract of southern timberland would produce pulpwood not less than four times as fast as a tract of equal area in the north.

"The chemical problems in the utilization of the southern pine are rapidly being overcome, so that pine pulpwood will gradually find its way into many other grades than coarse wrapping and kraft papers. This movement for the utilization of the southern pine in the manufacture of paper is reflected in requests to the Woodlands Section for information relative to the methods of peeling pine pulpwood, and the costs of pine logging operations."

Sales Suggestions for Paper Box Makers

"Sales Suggestions for Paper Box Manufacturers" is the title of a very interesting, handsomely-bound, 150-page book written by Robert F. Salade and published by the Shears Publishing Company, of LaFayette, Ind. In an introductory pamphlet the purposes of the book are outlined as follows:

1. To teach you how to improve your product and how to produce it more economically.
2. To suggest what modern and profitable merchandising methods can be adopted.
3. To explain how a better business can be developed.

Orders should be sent to the office of the company, the price of the book being \$2.75, postage prepaid.

To Represent Reeves Pulley Co. in Boston

The Reeves Pulley Company, of Columbus, Ind., announces a change in the agency of "The Reeves" Variable Speed Transmission for the New England territory. This machine is now sold exclusively by Manning, Maxwell & Moore, Inc., 99 Chauncy street, Boston, Mass., and a complete and separate variable speed department has been installed. This department is composed of engineers who have specialized in variable speeds. A large stock of both complete machines and parts is carried.

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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, SEPTEMBER 5, 1922.

ALUM.—Supplies of this commodity are growing more scarce each week, prices now averaging \$3.50 per cwt. Ground alum is bringing \$3.40 to \$3.60 and powdered \$3.50 to \$3.75.

BLEACHING POWDER.—Although bleach reserves are practically wiped out, the nominal price of 1.75 cents a pound still prevails for large drum quantities, works. Manufacturers are sold up well into the future.

BLANC FIXE.—Moving in increasingly better quantities, blanc fixe has held in excellent demand during the past week. The dry is still quoted at \$75 to \$85 per ton, however, and the pulp is listed at \$40 to \$50.

CAUSTIC SODA.—Scarcity of coal and rail difficulties have brought about a price stiffening in the market, some producers having increased the cost of 60 cents caustic to 2.70 cents per pound, works.

CHINA CLAY.—The demand for all grades of china clay continues unabated, the only difficulty of importers being the securing of adequate transportation facilities. Quantities of clay have entered various ports in recent weeks, and the strong demand gives the market an unusually firm tone. Domestic washed clay is quoted at \$7 to \$10, unwashed at \$5.50 to \$8 and imported clay at \$14 to \$22.

LIQUID CHLORINE.—With the passing of the warm summer months, chlorine manufacturers are in a better position to produce the liquid in greater quantities due to the fact that it may be stored more readily. The market is gradually steadying, but the wide variation of 4.00 to 7.00 cents a pound still exists.

ROSIN.—Varying approximately 10.00 cents per barrel within the week, rosin prices have again settled at the average of \$6.25 in barrel units of 280 pounds, grades E, F and G. The market is steady to firm.

SALTCAKE.—All prices may be considered nominal in the salt-cake market due to the combination of an excessive demand, scant supplies, and the coal and rail strikes. Chrome cake is listed as high as \$23 per ton, with acid cake around \$26.

SATIN WHITE.—As with blanc fixe, this whitening agent is growing in demand with the general picking up of early fall business. All bleached and light-colored paper manufacturers are consuming proportionately larger quantities, the price holding at 1.50 to 2.00 cents a pound.

SODA ASH.—As with all alkali products, soda ash has enhanced in price considerably as a direct result of the coal scarcity. In bulk the commodity is listed at 1.20 cents a pound, in bags, 1.30, and in barrels, 1.50.

SULPHUR.—Increased production and shipping costs have done much to strengthen the general tone of the sulphur market. Considerable tonnages are being turned over at the firm price of \$18 to \$20 per ton.

STARCH.—Starch prices are fairly steady, with the powdered being quoted at 2.47 and 2.75 cents a pound for bag and barrel quantities, respectively, and with pearl starch at 2.57 and 2.85. It is generally believed that this year's large corn crop should make prices easy for the next sixty to ninety days.

SULPHATE OF ALUMINA.—Another price boost was recorded in the aluminum sulphate market during the last week, and with production costs heading skyward together with a heavy demand, it is difficult to say how far they will go. Iron free sulphate is now up to \$2.25 to \$2.50 per cwt., and the commercial grade is quoted as high as 1.50 to 1.75. While some sulphate of alumina has been imported into the domestic market recently at prices averaging \$2.00, the tonnage is small and the product not wholly iron free.

Market Quotations

(Continued from page 63)

Solid Ledger Stock.	2.25	@	2.50	New Black Soft.	.03	@	.03 1/4
Writing Paper.....	.02	@	2.25	New Light See-			
No. 1 Books, heavy.	1.80	@	1.90	onds.....	.02	@	.02 1/4
No. 2 Books, light.	1.40	@	1.50	Khalid Cuttings...	.02 1/4	@	.02 1/4
No. 1 New Manila.	2.75	@	3.00	Corduroy.....	.02	@	.02 1/4
No. 1 Old Manila...	1.50	@	1.75	New Canvas.....	.07	@	.07 1/4
Container Manila...	1.20	@	1.25	New Black Mixed	2.75	@	3.00
Old Kraft.....	2.25	@	2.50	Old			
Overissue News...	1.25	@	1.30	White, No. 1—			
Old Newspaper....	1.15	@	1.20	Repacked.....	.06	@	.06 1/4
No. 1 Mixed Paper.	.01	@	1.10	Miscellaneous...	.04 1/4	@	.04 1/4
Common Paper....	.75	@	.80	White, No. 2—			
Straw Board, Chip.	.75	@	.80	Repacked.....	.03	@	.03 1/4
Binders' Bd. Chip.	.75	@	.80	Miscellaneous...	.02 1/4	@	.02 1/4
Domestic Rags—New.				Thirds and Blues—			
Price to Mill, f. o. b. Phila.				Repacked.....	1.65	@	1.80
Shirt Cuttings—				Miscellaneous...	1.40	@	1.55
New White, No. 1	.10	@	.10 1/4	Black Stockings...	1.75	@	2.25
New White, No. 2	.05 1/4	@	.06 1/4	Roofing Stock—			
Silesias, No. 1...	.05 1/4	@	.06	No. 1.....	1.00	@	1.10
New unbleached...	.09	@	.09 1/4	No. 2.....	.90	@	1.00
Washables.....	.03 1/4	@	.03 1/4	No. 3.....	.80	@	.90
Fancy.....	.04 1/4	@	.04 1/4	No. 4.....	.80	@	.90
Cottons—according to grades—				No. 5A.....	nominal		nominal
Blue Overall.....	.04 1/4	@	.05 1/4	B.....	nominal		nominal
New Blue.....	.02	@	.02 1/4	C.....	nominal		nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

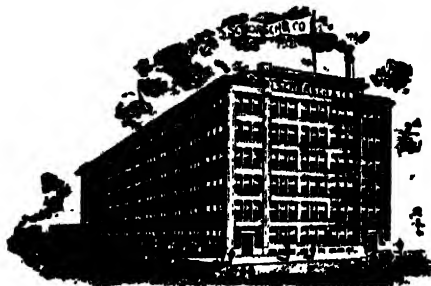
Paper				Wood, Vat Lined..	60.00	@	65.00
Bonds.....	.06 1/4	@	.65	Filled News Board.	52.50	@	55.00
Ledgers.....	.07 1/4	@	.55	Solid News Board.	60.00	@	65.00
Wrappings.....	.07 1/4	@	.42	S. Manila Chip....	62.50	@	67.50
Superfine.....	.15	@	.22 1/4	Pat. Coated.....	70.00	@	85.00
Fine.....	.15	@	.18				
Books, S. & S. C....	.07	@	.12	Old Papers			
Books, M. F.....	.05 1/4	@	.10	Shavings—			
Books, coated.....	.08	@	.16	No. 1 Hard White	4.00	@	4.25
Label.....	.08 1/4	@	.13	No. 1 Soft White	3.40	@	3.45
News, sheets.....	4.00	@	4.25	No. 1 Mixed....	1.50	@	1.75
News rolls.....	4.00	@	4.25	Ledgers & Wrtings	1.75	@	2.00
Manilas—				Solid Books.....	2.00	@	2.25
No. 1 Manila.....	\$5.50	@	7.00	Blanks.....	1.70	@	1.80
No. 1 Fibre.....	.07 1/4	@	—	No. 2 Light Books	1.50	@	1.80
No. 1 Jute.....	10.50	@	12.00	Folded News, over-			
Kraft Wrapping....	.06 1/4	@	.12	issues.....	19.00	@	20.00
Common Boxes.....	3.00	@	3.50	Gunny Bagging...	.85	@	.90
Boards				Manila Rope.....	5.75	@	6.00
(Per Ton Destination)				Common Paper....	.80	@	.90
Chip.....	\$50.00	@	\$55.00	Old News.....	.80	@	.90
News, Vat Lined...	\$1 50	@	\$55.00	Old Kraft.....	1.75	@	2.00

TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper				Sulphite, bleached..	80.00	@	90.00
(Mill Prices to Jobbers f. o. b. Mill)				Sulphate.....	70.00	@	—
Bond—				Old Waste Papers			
Sulphite.....	.11	@	.12 1/4	(In carload lots, f. o. b. Toronto)			
Light tinted.....	.12	@	.13 1/4	Shavings—			
Dark tinted.....	.13 1/4	@	.15	White Env. Cut...	3.75	@	—
Ledgers (sulphite).	.13	@	.13	Soft White Book			
Wrapping (sulphite).	.9 1/4	@	.12	Shavings.....	3.40	@	3.40
News, f. o. b. Mills				White Blk News	1.70	@	—
Rolls (carloads).	3.50	@	—	Book and Ledger—			
Sheets (carloads).	—	@	4.25	Flat Magazine and			
Sheets (2 tons or	—	@	4.50	Book Stock (old)	1.70	@	—
over).....	—	@	—	Light and Crum-			
Book—				pled Book Stock	1.55	@	—
No. 1 M. F. (car-	8.50	@	—	Ledgers and Writ-			
loads).....	—	@	—	ings.....	1.95	@	—
No. 2 M. F. (car-	7.50	@	—	Solid Ledgers....	1.95	@	—
loads).....	—	@	—	Manilas—			
No. 3 M. F. (car-	7.00	@	—	New Manila Cut.	1.70	@	1.80
loads).....	—	@	—	Printed Manilas..	.90	@	1.00
No. 1 S. C. (car-	9.00	@	—	Kraft.....	2.25	@	—
loads).....	—	@	—	News and Scrap—			
No. 2 S. C. (car-	8.00	@	—	Strictly Overissue	.90	@	—
loads).....	—	@	—	Folded News....	.80	@	—
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litho.....	—	@	—	pers.....	—	@	—
No. 2 Coated and	13.00	@	—	Domestic Rags—			
litho.....	—	@	—	Price to mills, f. o. b. Toronto			
No. 3 Coated and	12.25	@	—	Per lb.			
litho.....	—	@	—	No. 1 White shirt			
Coated and litho,	14.25	@	—	cuttings.....	.11	@	.11 1/4
colored.....	—	@	—	No. 2 White shirt			
Wrapping—				cuttings.....	.06 1/4	@	—
Grey.....	4.50	@	—	Fancy shirt cut-			
White.....	5.00	@	—	tings.....	.05	@	.05 1/4
"B" Manila.....	5.50	@	—	No. 1 Old whites	.04	@	—
No. 1 Manila.....	6.75	@	—	Thirds and blues	.02	@	.02 1/4
Fibre.....	6.75	@	—	Per cwt.			
Kraft, M. F.....	8.00	@	—	Black stockings..	2.00	@	2.25
M. G.....	8.15	@	—	Roofing stock:			
Pulp				No. 1.....	1.35	@	—
(F. o. b. Mill)				No. 2.....	1.20	@	—
Ground wood.....	\$25.00	@	\$37.50	Roofing stock:			
Sulphite easy bleach-	60.00	@	65.00	Manila rope.....	.06	@	.06 1/4
ing.....	—	@	—	No. 3.....	.01 1/4	@	—
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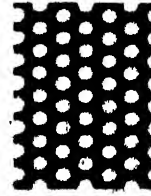
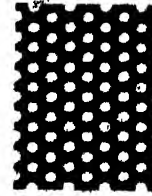
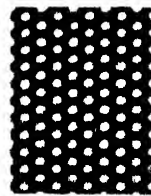
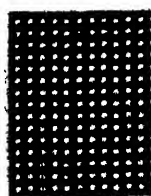
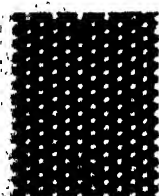
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When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

SALESMAN WANTED for Coating Mill situated in the East. Must be high class man and have considerable experience in selling high class coated papers. Good position for the right man. Address, Box 5364, care Paper Trade Journal. S-14

WANTED—First class machine tender on two-cylinder tissue and specialty machine. Address, Box 5365, care Paper Trade Journal. S-14

WANTED—Practical man as assistant superintendent for container board mill. Address, Box 5366, care Paper Trade Journal. S-7

WANTED—Backtenders for a sixty-inch board machine. Two tours. City job. Address, Box 5380, care Paper Trade Journal. S-7

WANTED—Wood room foreman, must be good mechanic and understand how to prepare uniform clean chips. Give references, experience, wages expected. Address, Box 5386, care Paper Trade Journal. S-7

WANTED—Envelope adjuster who is competent in taking full charge of one Rotary and six Plunger Type Machines. Plant located on Pacific Coast. Good opportunity. Steady position. In application, give experience, age and salary expected. Address, Box 5347, care Paper Trade Journal. S-6

WANTED—One Fourdrinier and one Cylinder Backtender. Three shifts. Light weight tissues. References required. Address, Box 5387, care Paper Trade Journal. S-6

WANTED—Mechanical engineer with Paper and Pulp Mill experience. Must be familiar with structural steel and reinforced concrete design. Permanent position for right man. Give age, references, nationality, salary receiving and expected in first letter. Address, Box 5388, care Paper Trade Journal. S-14

PURCHASING AGENT

Energetic and up-to-date, immediately, for modern waxed paper plant in Middle West. Must be experienced paper man and fully conversant with all converting processes. One with mechanical and engineering knowledge preferred. Well paying, permanent position with future. Answer with full details of references and experience. Address, Box 5378, care Paper Trade Journal. S-14.

HELP WANTED

WANTED—Superintendent for Fourdrinier Tissue Mill. Must be up on Waxing papers from ten pound to thirty pound. Send copy of references and state experience and salary wanted. Address, Box 5389, care Paper Trade Journal. S-14

AN EASTERN MANUFACTURER of Glazed and Plated surface coated box makers' papers wishes to employ experienced salesman familiar with the trade. References required. Address, Box 5390, care Paper Trade Journal. S-7

WANTED—Beater engineer, back tender cutterman and trimmerman for book and railroad writing mill. Give references in reply. Address, Box 5391, care Paper Trade Journal. S-21

STENOGRAPHER: CHRISTIAN: FEMALE: with paper stock experience. Good opportunity in brokers office in New York City. Reply giving full details of experience. Address, Box 5392, care Paper Trade Journal. S-7

SUPERINTENDENT WANTED by a large newsprint manufacturer located in New Jersey. Excellent opportunity and ample remuneration for a thorough trained man who can produce results. Kindly state experience and full details in first letter. Communications strictly confidential. Address, Box 5393, care Paper Trade Journal. S-7

WANTED—Capable and reliable Beater Engineer for Mill located in Middle West. Manufacturers of sulphite papers and specialties. Experience necessary on colors. Good wages. Three tour day. Address, Box 5394, care Paper Trade Journal. S-14

Toilet Paper Salesman

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SITUATIONS WANTED

WANTED—Position as superintendent or assistant. 28 years' experience on Kraft, Tags, Roofing Felt, Water-proof, Blotting, all grades of Cylinder Papers. Address, Box 5395, care Paper Trade Journal. S-7

WANTED—Position as Machine Tender on Harper and Edwards attachment Cylinder Tissue Machine. Heavy weight waxing paper on Harper. Address, Box 5398, care Paper Trade Journal. S-14

YOUNG MAN, 24, at present employed wishes to make change. Desirous of connecting with reliable concern, where there is possibility for good future. Have worked in capacity as salesman, office man and have had five years of mill experience. Address, Box 5367, care Paper Trade Journal. tf

WANTED—Position as superintendent of Greaseproof and Glassine mill. Have had fifteen years' experience in the manufacturing of these papers. Am thoroughly competent and reliable man. Will give full particulars upon request. Address, Box 5368, care Paper Trade Journal. S-7

SITUATIONS WANTED

SUPERINTENDENT open for position. Up-to-date on colored specialties, Greaseproof, Glassine, Rope, Jute and all grades of wrapping, also book and bond papers. Am a good mechanic and can handle help. Address, Box 5369, care Paper Trade Journal. S-7

BOSS FINISHER whom previous managers and superintendents have stated "was the best finishing foreman ever employed by them." Experienced on cutters, calendars and shipping. Best references. Address, Box 5374, care Paper Trade Journal. S-14

SALESMAN well acquainted in the Chicago Territory on Corrugated, Solid Fibre and Folding Boxes would like to connect with manufacturer of one or all of the above lines. Over 20 years experience both inside and out. Have excellent acquaintance with the wholesale paper trade and would consider direct mill proposition for this territory. Can furnish high class references. Address, Box 5376, care Paper Trade Journal. S-7

MASTER MECHANIC with a large experience in construction, reconstruction and efficiency, desires to make change. Address, Box 5383, care Paper Trade Journal. tf

SUPERINTENDENT of ability open for position. Expert on colors, familiar with all grades of board. Understands plant thoroughly. Is a good executive and can get results. Address, Box 5384, care Paper Trade Journal. S-28

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5314, care Paper Trade Journal. S-7

PRACTICAL PAPER MAKER desires a position with a board or specialty mill. Having had experience in both cylinder and fourdrinier mills in all departments. Have been doing engineering work in different mills for past four years. Experienced in construction and mechanical details. Address, Box 5333, care Paper Trade Journal. tf

SULPHITE SUPERINTENDENT, 20 years' practical and technical training, wishes to get in communication with Managers of Mills who want the best and are not getting it. Address, Box 5353, care Paper Trade Journal. O-5

EXPERT ON COLORS—Practical paper-maker, 15 years' experience on various grades, also first class colormen with experience as demonstrator with largest color manufacturers, seeks position as assistant superintendent or in similar capacity. Address, Box 5361, care Paper Trade Journal. S-6

MECHANICAL ENGINEER; 12 years' experience with thorough knowledge of power plant and engraving. Will submit record for investigation to executive requiring reduction in power costs and coal consumption. Address, Box 5400, care Paper Trade Journal. S-21

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FOR SALE, cheap 22½ tons sulphite for making paper John May Little Towson, Maryland S-7

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Buffalo Forge C—4-½ x 5-½ S-6

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WANTED—One 50-inch Seybold Paper Cutter, one 22x44 Sheridan die press, one large embossing press one 12-inch or larger rotary divider machine Address Box 5396, care Paper Trade Journal S-14

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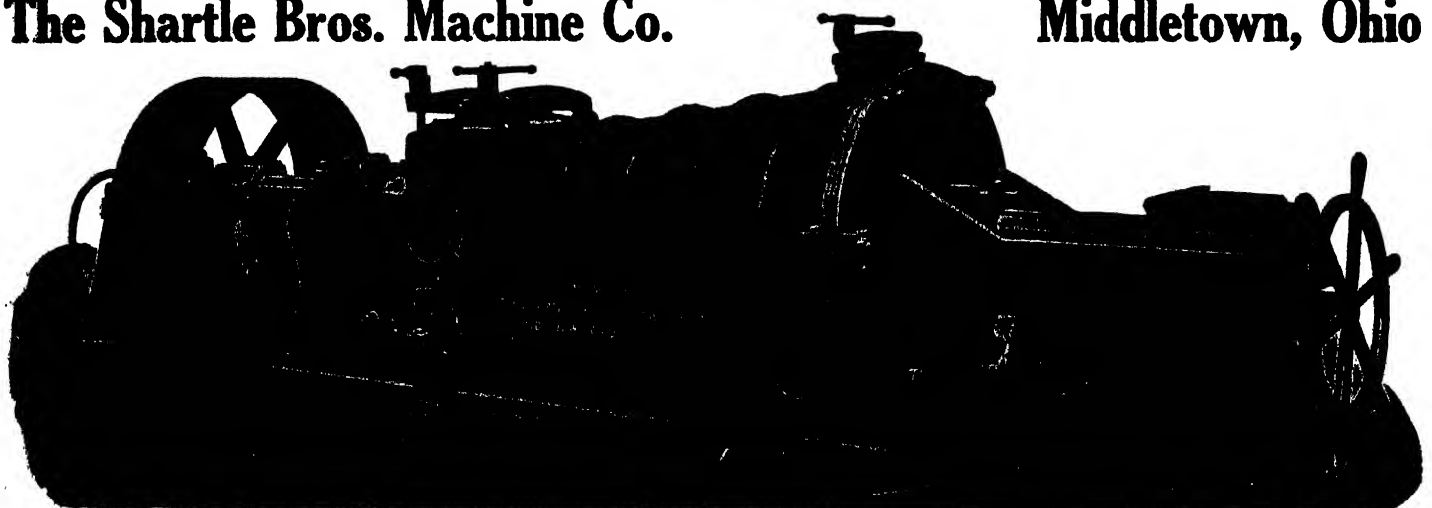
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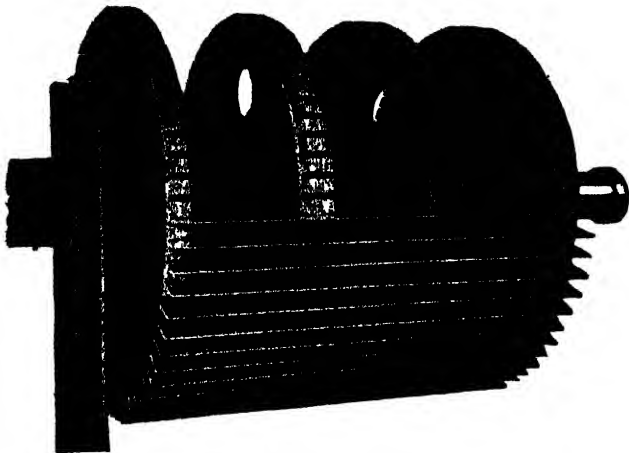
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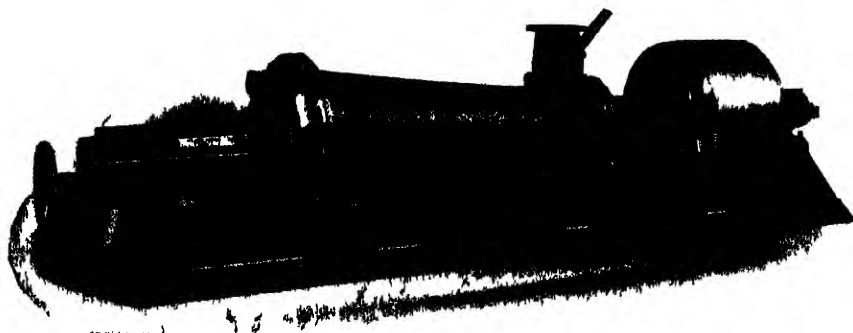


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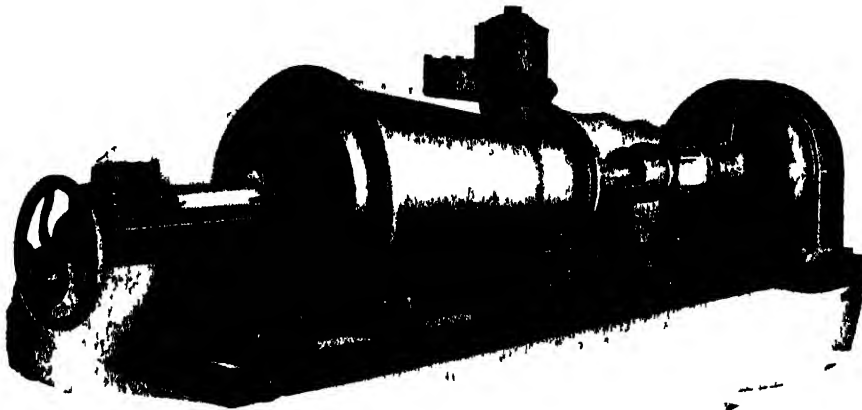
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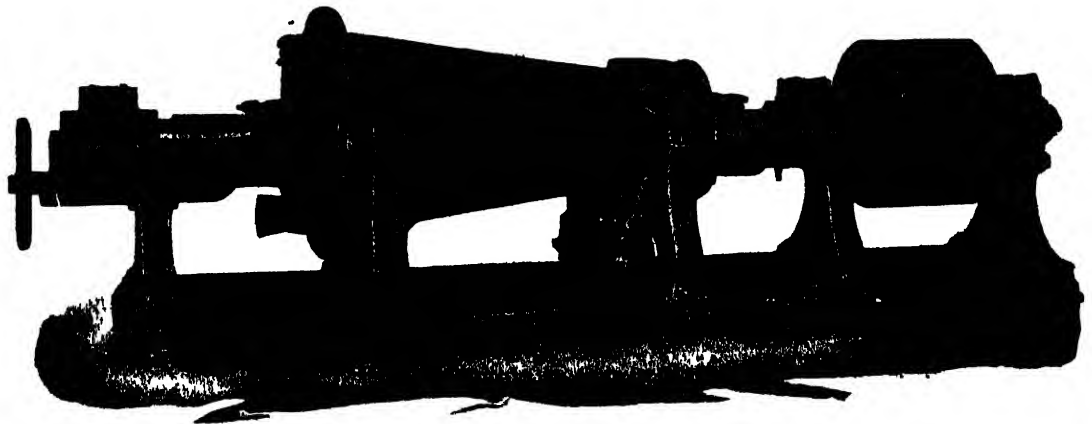
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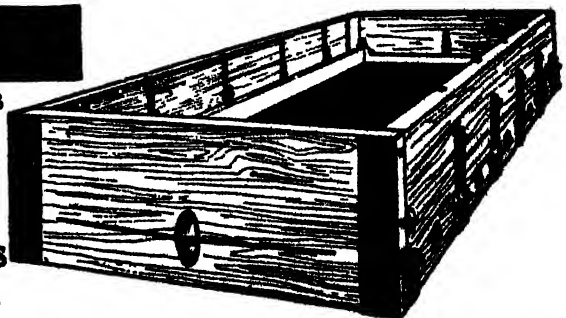
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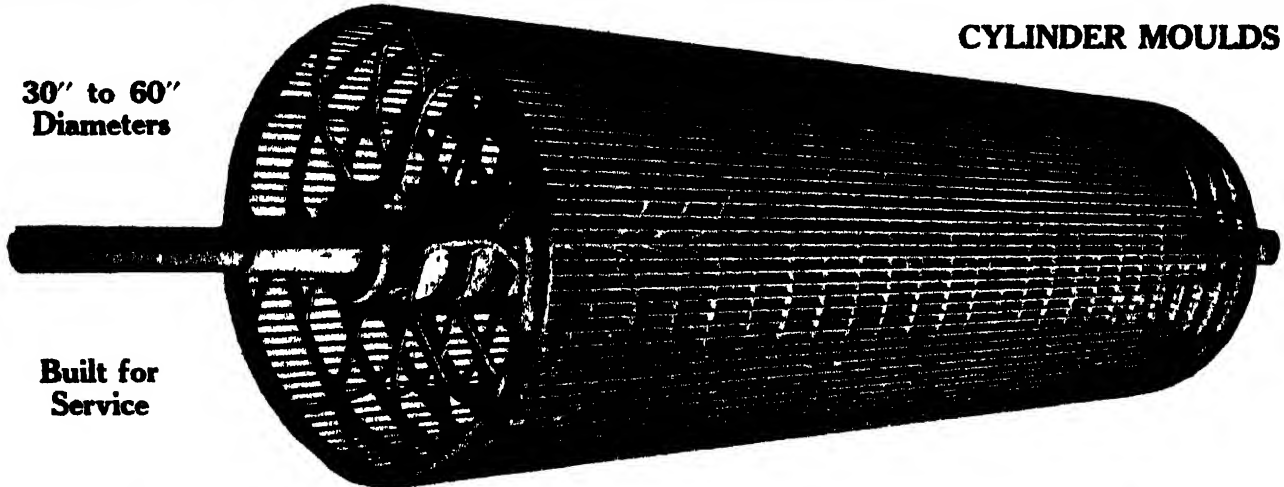
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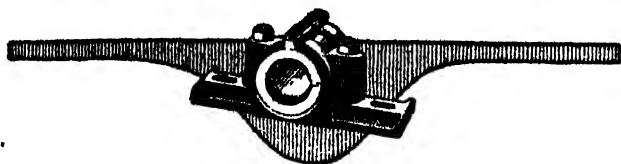
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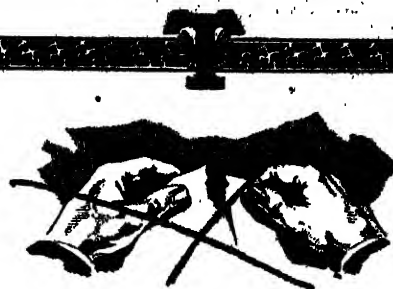
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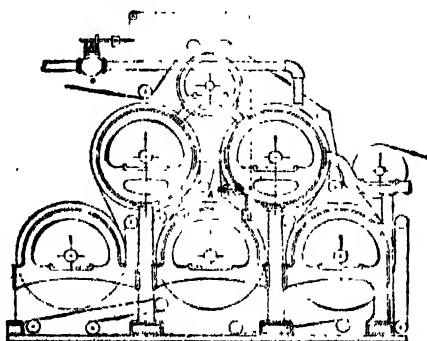
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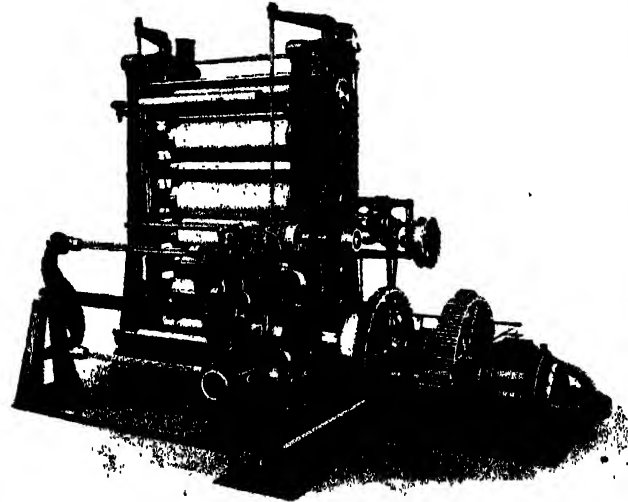
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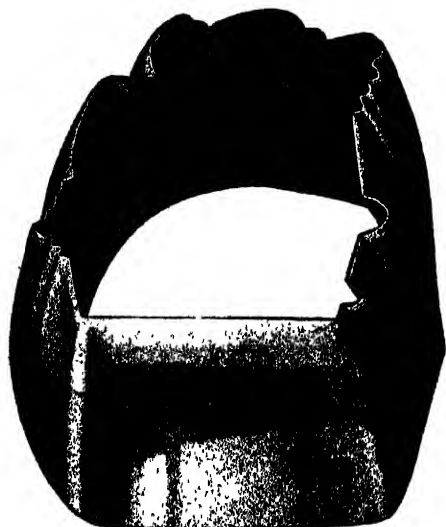
New York

CHICAGO

PITTSBURGH

648 McCormick Bldg. 1117 Farmers Bank Bldg.

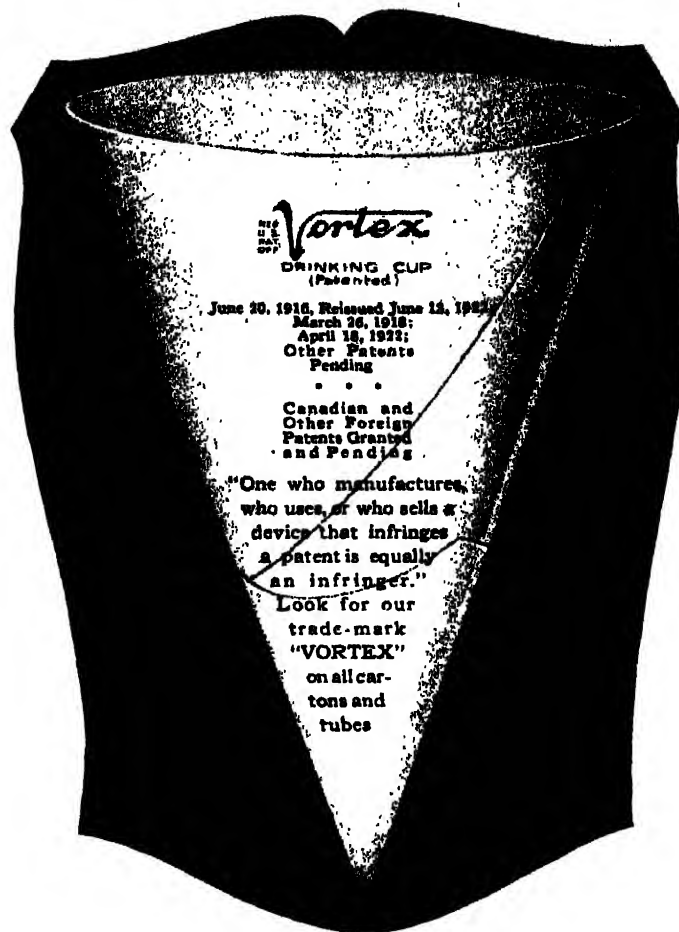
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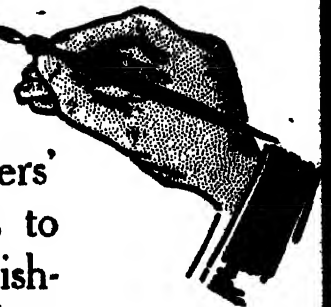
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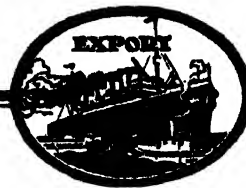
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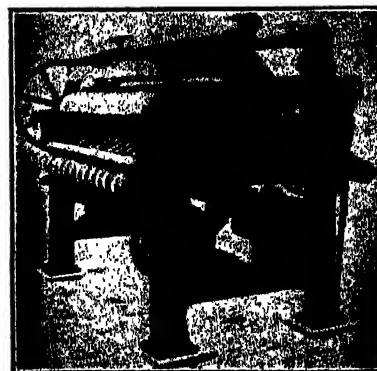
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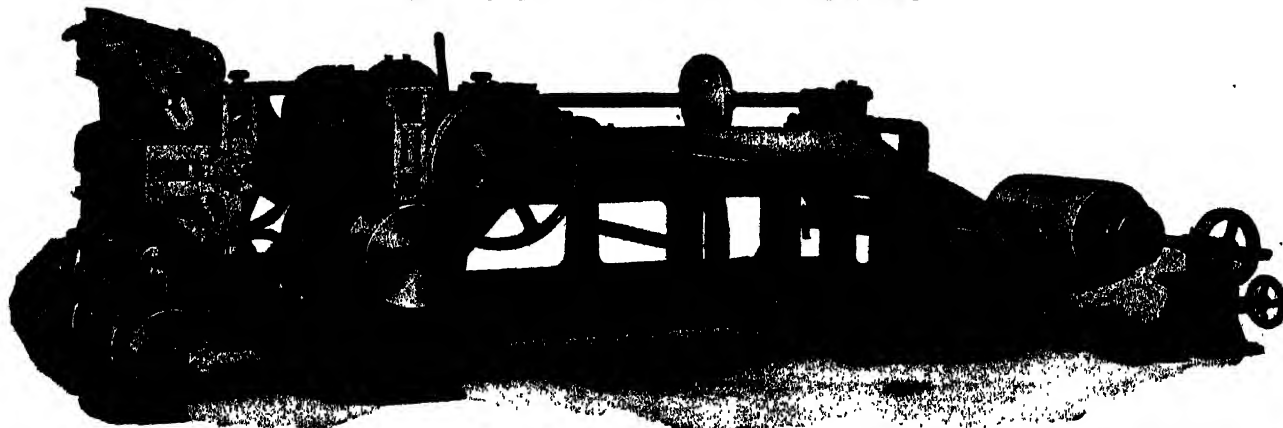
PAPER MAKING—PAPER CUTTING MACHINERY

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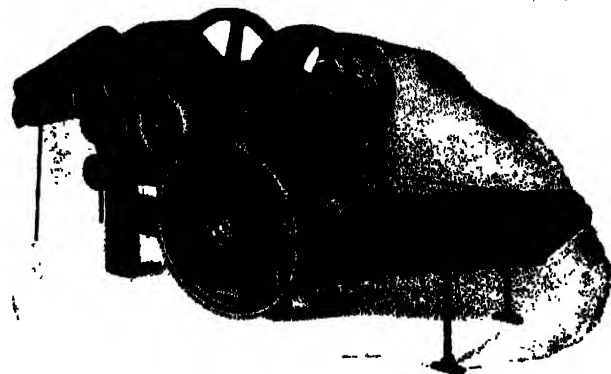
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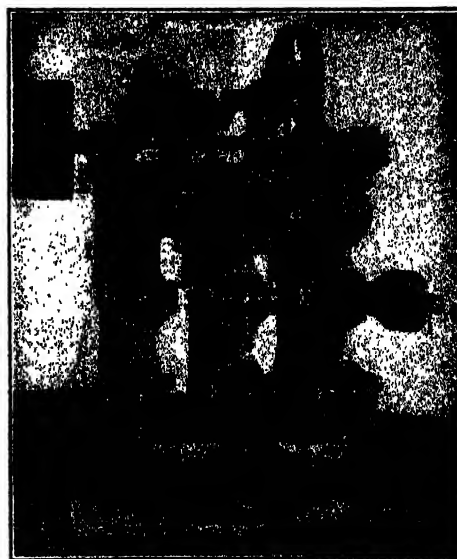
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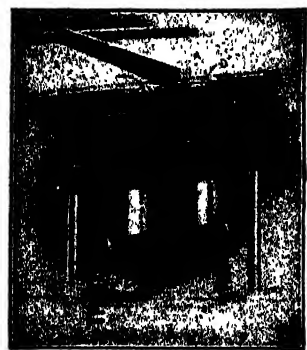
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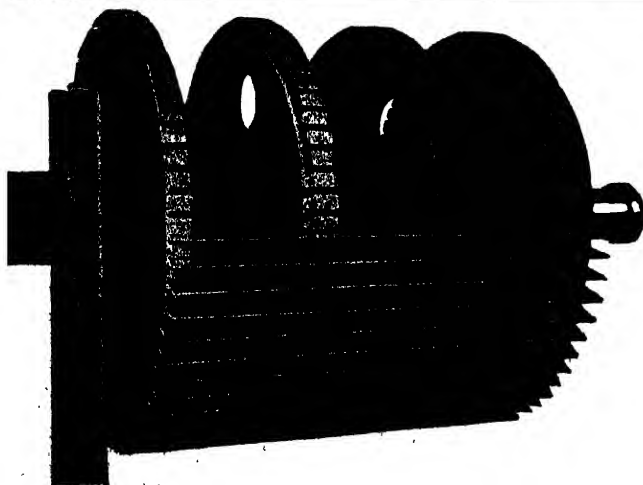
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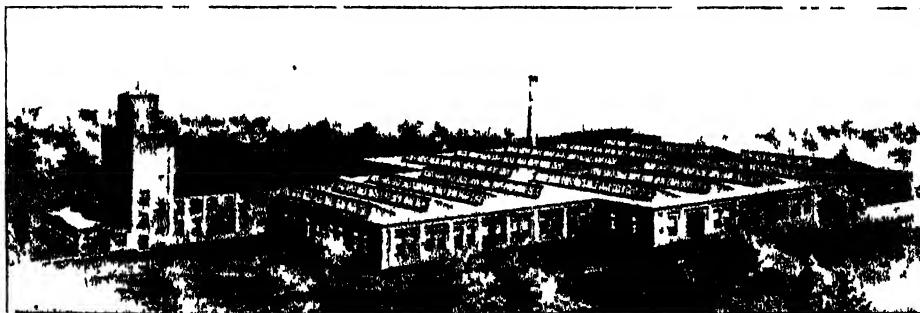
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are scientifically designed for openness. They will make a smooth, firm sheet and give long wear.



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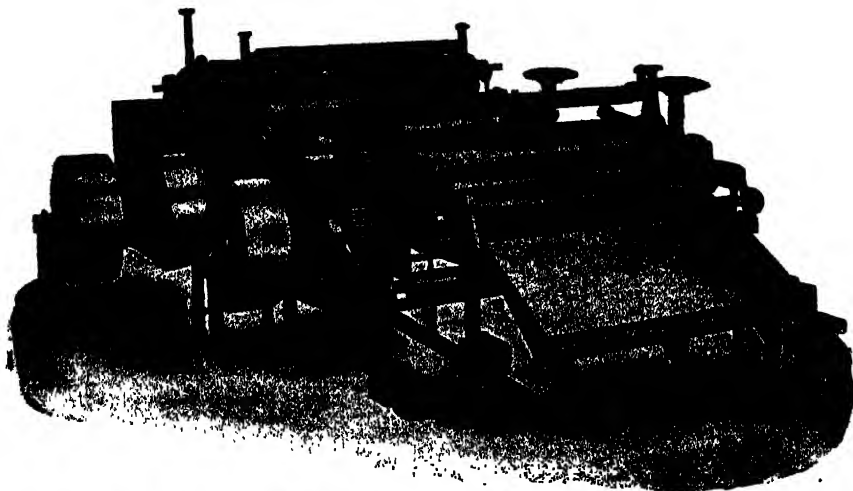


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FOR CHEMICAL PULP—including Sulphite, Sulphate, Soda, also Cotton and Waste Paper fiber.

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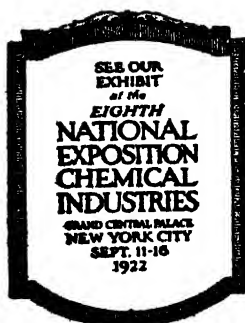
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automatically record the speed of the shafting and the pressure of the grinding stones. With the information furnished by the instruments, there is no need for guess-work.

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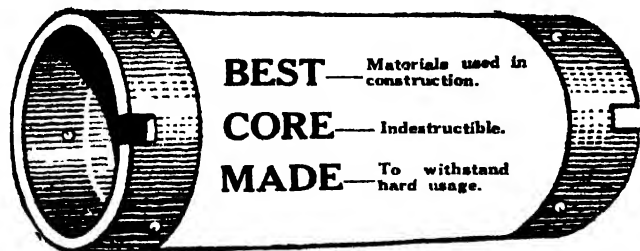
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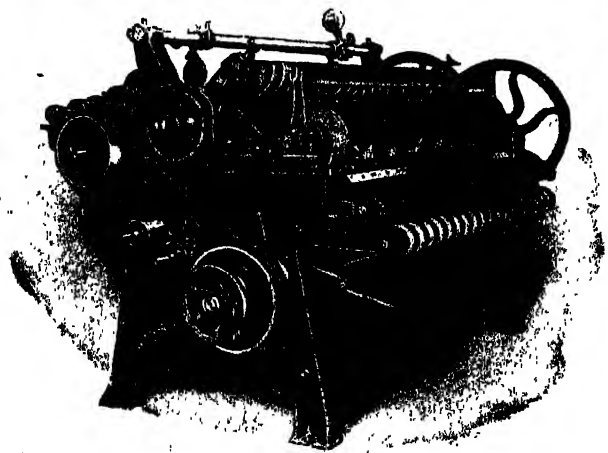
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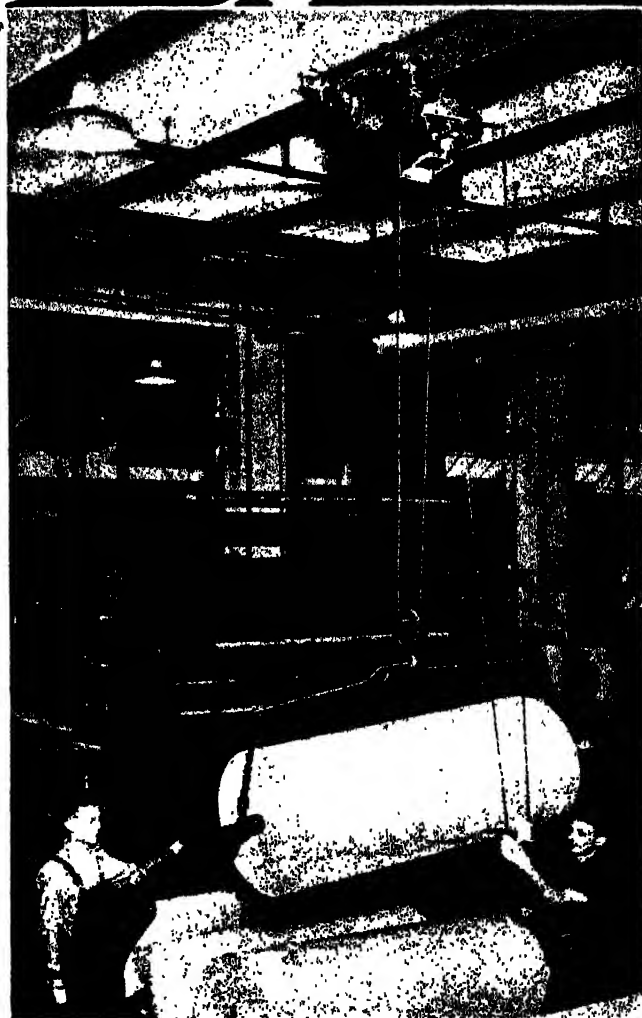
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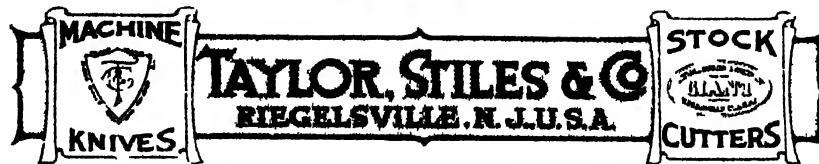


NO 11 TRIPLEX

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hour

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For Roofing and Felt
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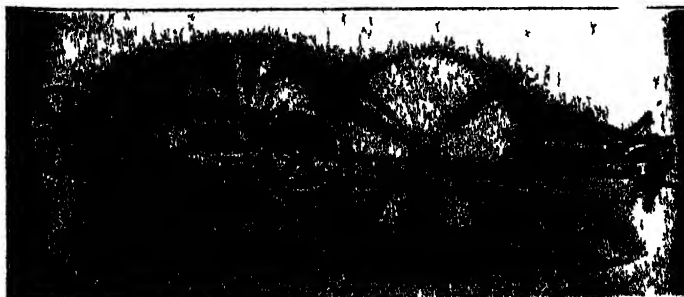
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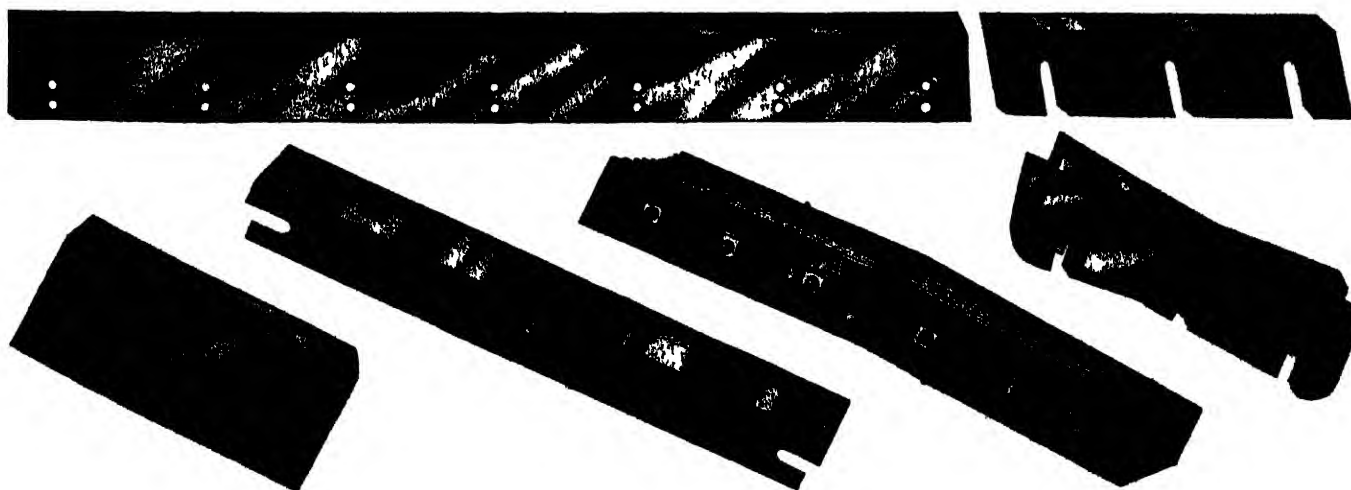


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FIFTY-FIRST YEAR

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Cable Address Catchow, New York

Western Publication Office—431 S. Dearborn Street, Chicago
New England Office—Room 46, 127 Federal Street, Boston

Washington Office—L. M. Lamn, 63 Home Life Bldg.
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Vol. LXXV. No. 11

NEW YORK AND CHICAGO

Thursday, September 14, 1922

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REPORT ON THE TARIFF MADE BY CONFERENCE COMMITTEE

Coated Paper Manufacturers Score Victory—Casein Tariff Reduced to 2½ Cents Per Pound—Both Bleached and Unbleached Grades of Mechanical and Chemical Wood Pulp Remain on Free List—Tariff Schedules Announced for Papers and Books, Board, Tissue, Coated Paper, Writing and Note Paper, Envelopes, Etc.—Bill Now Under Consideration.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 13, 1922.—The tariff conferees of the Senate and House made their report to the two Houses of Congress on Tuesday, and it is expected that consideration of the bill will be begun in the House today.

The coated paper manufacturers won a victory over the agricultural bloc in that the rate on casein against which the manufacturers were waging war was reduced from 4 cents per pound to 2½ cents per pound. The casein paragraph as it was reported out of conference reads:

"PARAGRAPH 19.—Casein or lactarene, 2½ cents per pound." The conferees made a change in the bleaching powder rate so that that paragraph now reads:

"Bleaching powder or chlorinated lime, three-tenths of one cent per pound."

Mechanically ground wood pulp and standard news print were both left on the free list but the reciprocal clause was stricken out in both instances. The wood pulp paragraph now reads:

"Mechanically ground wood pulp, chemical wood pulp, unbleached or bleached." The news print paragraph reads: "Standard news print paper." Both of these items of course are on the free list. The paper schedule as it comes from conference with the items of special interest to the paper industry and as it will undoubtedly become law is as follows:

SCHEDULE 13 Papers and Books

PARAGRAPH 1301. Printing paper, not specially provided for, one-fourth of 1 cent per pound and 10 per centum ad valorem: Provided, That if any country, dependency, province, or other subdivision of government shall forbid or restrict in any way the exportation of (whether by law, order, regulation, contractual relation, or otherwise, directly or indirectly), or impose any export duty, export license fee, or other export charge of any kind whatsoever (whether in the form of additional charge or license fee or otherwise) upon printing paper, wood pulp, or wood for use in the manufacture of wood pulp, the President may enter into negotiations with such country, dependency, province, or other subdivision of government to secure the removal of such prohibition, restriction, export duty, or other export charge, and if it is not removed he may, by proclamation, declare such failure of negotiations, setting forth the facts. Thereupon, and until such prohibition, restriction, export duty, or other export charge is removed, there shall be imposed upon printing paper provided for in this paragraph, when imported either directly or indirectly from such country, dependency, province, or other subdivision of government, an additional duty of 10 per centum ad valorem and in addition thereto an amount equal to the highest export duty or other export charge imposed by such country, dependency, province, or other subdivision of government, upon either an equal amount of printing paper or an amount of wood pulp or wood for use in the manufacture of wood pulp necessary to manufacture such printing paper.

Board, Wall Board and Pulp Board

PARAGRAPH 1302. Paper board, wallboard, and pulpboard, in-

cluding cardboard, and leather board or compress leather, not laminated, glazed, coated, lined, embossed, printed, decorated or ornamented in any manner, not cut into shapes for boxes or other articles and not specially provided for, 10 per centum ad valorem pulpboard in rolls, for use in the manufacture of wallboard. 5 per centum ad valorem: Provided, That for the purpose of this Act any of the foregoing less than nine one-thousandths of an inch in thickness shall be deemed to be paper; sheathing paper, roofing paper, deadening felt, sheathing felt, roofing felt or felt roofing, whether or not saturated or coated, 10 per centum ad valorem. If any country, dependency, province, or other subdivision of government imposes a duty on any article specified in this paragraph, when imported from the United States, in excess of the duty herein provided, there shall be imposed upon such article, when imported either directly or indirectly from such country, dependency, province, or other subdivision of government, a duty equal to that imposed, by such country, dependency, province, or other subdivision of government on such article imported from the United States.

PARAGRAPH 1303. Filter massé or filter stock, composed wholly or in part of wood pulp, wood flour, cotton or other vegetable fiber, 20 per centum ad valorem; indurated fiber ware, masks composed of paper, pulp or papier-mâché, manufactures of pulp, and manufactures of papier-mâché, not specially provided for (1130) 25 per centum ad valorem.

Tissue Paper

PARAGRAPH 1304. Papers commonly known as tissue paper, stereotype paper, and copying paper, india and bible paper, condenser paper, carbon paper, coated or uncoated, bibulous paper, pottery paper, tissue paper for waxing, and all paper similar to any of the foregoing, not specially provided for, colored or uncolored, white or printed, weighing not over six pounds to the ream of four hundred and eighty sheets on the basis of twenty by thirty inches, and whether in reams or any other form, 6 cents per pound, and 15 per centum ad valorem; weighing over six pounds and less than ten pounds to the ream, 5 cents per pound and 15 per centum ad valorem; india and bible paper weighing ten pounds OR MORE and less than eighteen pounds to the ream, 4 cents per pound and 15 per centum ad valorem; crêpe paper, 6 cents per pound and 15 per centum ad valorem: Provided, That no article composed wholly or in chief value of one or more of the papers specified in this paragraph shall pay a less rate of duty than that imposed upon the component paper of chief value of which such article is made.

Coated Papers

PARAGRAPH 1305. Papers with coated surface or surfaces, not specially provided for, 5 cents per pound and 15 per centum ad valorem: papers with coated surface or surfaces, embossed or printed otherwise than lithographically, and papers wholly or partly covered with metal or its solutions (except as herein provided), or with gelatin, linseed oil cement, or flock, 5 cents per pound and 15 per centum ad valorem; papers, including wrapping paper, with the surface or surfaces wholly or partly decorated or covered with a design, fancy effect, pattern, or character, except designs, fancy effects, patterns, or characters produced on a paper machine without attachments, or produced by lithographic process, 4½ cents per pound, and in addition thereto, if embossed, or printed otherwise than lithographically, or wholly or partly covered with metal or its solutions, or with gelatin or flock, 17 per centum ad valorem: Provided, That paper wholly or partly covered with metal or its solutions, and weighing less than fifteen pounds per ream of four hundred and eighty sheets, on the basis of twenty by twenty-five inches, shall pay a duty of 5 cents per pound and 17 per centum ad valorem; gummed papers, not specially provided for, including simplex decalcomania paper not printed, 5 cents per pound; cloth-lined or reinforced paper, 5 cents per pound and 17 per centum ad valorem; papers with paraffin or wax-coated surface or surfaces,

vegetable parchment paper, grease-proof and imitation parchment papers which have been supercalendered and rendered transparent or partially so, by whatever name known, all other grease-proof and imitation parchment paper, not specially provided for, by whatever name known, 3 cents per pound and 15 per centum ad valorem; bags, printed matter other than lithographic, and all other articles, composed wholly or in chief value of any of the foregoing papers, not specially provided for, and all boxes of paper or papier-mâché or wood covered or lined with any of the foregoing papers or lithographed paper, or covered or lined with cotton or other vegetable fiber, 5 cents per pound and 20 per centum ad valorem; plain basic paper for albumenizing, sensitizing, baryta coating, or for photographic processes by using solar or artificial light, 3 cents per pound and 15 per centum ad valorem; albumenized or sensitized paper or paper otherwise surface coated for photographic purposes, 3 cents per pound and 20 per centum ad valorem; wet transfer paper or paper prepared wholly with glycerin or glycerin combined with other materials, containing the imprints taken from lithographic plates or stones, 65 per centum ad valorem.

Writing and Note Papers

PARAGRAPH 1307. Writing, letter, note, drawing, handmade paper and paper commercially known as handmade paper and machine handmade paper, japan paper and imitation japan paper by whatever name known, Bristol board of the kinds made on a Fourdrinier machine, and ledger, bond, record, tablet, typewriter, manifold, and onionskin and imitation onionskin paper, calendered or uncalendered, weighing seven pounds or over per ream, and paper similar to any of the foregoing, 3 cents per pound and 15 per centum ad valorem; but if any of the foregoing is ruled, bordered, embossed, printed, lined, or decorated in any manner, other than by lithographic process, it shall pay 10 per centum ad valorem in addition to the foregoing rates: Provided, That in computing the duty on such paper every one hundred and eighty-seven thousand square inches shall be taken to be a ream.

Paper Envelopes

PARAGRAPH 1308. Paper envelopes not specially provided for shall pay the same rate of duty as the paper from which made and in addition thereto, if plain, 5 per centum ad valorem; if bordered, embossed, printed, tinted, decorated, or lined, 10 per centum ad valorem; if lithographed, 30 per centum ad valorem.

PARAGRAPH 1309. Jacquard designs on ruled paper, or cut on Jacquard cards, and parts of such designs, 35 per centum ad valorem; hanging paper, not printed, lithographed, dyed, or colored, 10 per centum ad valorem; printed, lithographed, dyed, or colored, 12 cents per pound and 20 per centum ad valorem; wrapping paper not specially provided for, 30 per centum ad valorem; blotting paper, 30 per centum ad valorem; filtering paper, 5 cents per pound and 15 per centum ad valorem; paper not specially provided for, 30 per centum ad valorem.

Papers and Paper Boards

PARAGRAPH 1313. Papers and paper board and pulpboard, including cardboard and leatherboard or compress leather, embossed, cut, die-cut, or stamped into designs or shapes, such as initials, monograms, lace, borders, bands, strips, or other forms, or cut or shaped for boxes or other articles, plain or printed, but not lithographed, and not specially provided for; paper board and pulpboard, including cardboard and leatherboard or compress leather, laminated, glazed, coated, lined, printed, decorated, or ornamented in any manner; press boards and press paper, all the foregoing, 30 per centum ad valorem; test or container boards of a bursting strength above sixty pounds per square inch by the Mullen or the Webb test, 20 per centum ad valorem; stereotype-matrix mat or board, 35 per centum ad valorem; wall pockets, composed wholly or in chief value of paper, papier-mâché or paper board, whether or not die-cut, embossed, or printed lithographically or otherwise; boxes, composed wholly or in chief value of paper, papier-mâché or paper

board, and not specially provided for; manufactures of paper, or of which paper is the component material of chief value, not specially provided for, all the foregoing, 35 per centum ad valorem.

Trinity Paper Mills to Have Plant in Dallas

[FROM OUR REGULAR CORRESPONDENT]

DALLAS, Tex., September 11, 1922.—The Trinity Paper Mills Corporation, a \$6,000,000 organization backed principally by New York capital, will erect a \$500,000 paper mill in Dallas and will manufacture high grade paper from cotton linters, according to a telegram received from Adam H. Davidson of New York, who will become treasurer of the company. Linter for the project will be drawn from the cotton oil mills in Dallas and the rest of the State, according to P. H. Diggle, secretary of the company. The capital stock has been fully subscribed, Mr. Davidson said.

Officers are Dallas men, as follows: J. V. Webb, president and treasurer; J. M. Irwin, vice-president; P. H. Diggle, secretary, and Adam H. Davidson and W. M. Cannon, directors.

"While the mill in Dallas will not be the largest paper mill in the country by any means, it will be a distinct addition to the industries of the nation, as it will be the only mill manufacturing paper from cotton linters in America with the exception of the mill now operating with a four-ton-a-day capacity at Commerce, Tex.," said Mr. Diggle.

"Dallas will be the home office of a system of such mills that are to be constructed in all the Southern cotton producing States, and direction of additional mills will be in the hands of the Dallas office," he said.

Plans for the mill have been drawn up and selection of the site is expected soon. However, construction of the mill may not begin before the first of 1923, it was announced.

The Dallas mill will have a capacity of between twenty and thirty tons of finished high-grade paper a day, and it is expected that the commodity will be distributed all over the United States, the officers said. A ten-acre plot of ground will be required for the mill site.

The Trinity Paper Mills of Dallas developed the process for manufacturing pulp from cotton linters and has been shipping much of its output to Eastern paper mills, it is pointed out in a letter from Mr. Davidson. The desire of the company to locate in Dallas a paper mill to handle the pulp and turn it out as a finished paper led to the organization of the Trinity Paper Mills Corporation, and among the stockholders are a number of well known New York capitalists.

Referring to the establishment of the mill in Dallas, Mr. Davidson said: "This will mean the building up of a large industrial business throughout the entire South, utilizing what is now practically a waste product from the South's greatest crop, making that crop even more stabilized than heretofore, furnishing labor for skilled and unskilled workers throughout the South, and furnishing a large percentage of the South's tremendous demand for high-grade white papers from the South's own factories."

Financing and sale of the securities of this corporation has been handled entirely by the Dallas Guarantee Mortgage Company, through Mr. Davidson, the officer said.

Will Assist in Supplying Rubber Latex

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 13, 1922.—The Paper Division of the Department of Commerce has received notice that the British inventor of rubber latex, about which American paper manufacturers have expressed so much interest, is able to supply the latex in any quantity up to a thousand gallons, to be shipped from Singapore. If satisfactory arrangements cannot be made directly with the inventor, the paper division has offered to help the manufacturers obtain what they wish.

CHEMICAL EXPOSITION IN NEW YORK IS BIG SUCCESS

Mammoth Display of Modern Chemistry Fills Four Floors of Grand Central Palace—Over 400 Exhibitors Participate—Speeches, Moving Pictures and Round-Table Meetings Are Features of Program—Technical Association Holds Meeting Wednesday Afternoon, George E. Williamson, President, Presiding—Session Is Well Attended—Chemical Manufacturers Provide Unique Displays.

Newest developments in the field of chemistry and allied industries were emphasized at the Eighth Annual Chemical Exposition held this week at the Grand Central Palace. Recent inventions, some of which are at least theoretically revolutionizing, were exhibited, and many improvements upon modern methods of production were suggested in varied lines of industry. One entire afternoon, Wednesday, was devoted to the pulp and paper industry.

The exhibits numbered over 400, the main body of displays being taken up by chemical raw materials and machinery of the various industries controlled or influenced by chemistry. Programs consisting of speeches by well-known scientists and business men, moving pictures, and round-table discussions were scheduled.

Separate meetings, set for succeeding days, were given over to the Synthetic Organic Chemical Manufacturers, the Pulp and Paper Industry, the Technical Photographic and Microscopical Society, the American Ceramic Society, and the American Chemical Society. A series of dinners also were arranged during the week.

Technical Association Meeting

On Wednesday afternoon at 2 o'clock, George E. Williamson, president of the Technical Association of the Pulp and Paper Industry, took the chair to preside over the "Paper Meeting." An interesting and varied program was offered, the meeting being exceptionally well attended and the list of speeches was augmented by the running off of two motion pictures having a direct bearing on the trade. By courtesy of the G. H. Mead Company, eight reels showing the manufacture of news print paper at the Spanish River Pulp and Paper Mills, Limited, in Ontario, were exhibited, and by courtesy of the U. S. Bureau of Mines and the Texas Gulf Sulphur Company, the story of the sulphur industry was depicted. These graphic illustrations of productive methods considerably aided the understanding of certain seasonal and mechanical tie-ups in the industries concerned.

Paper Program

The complete program of the "Paper Meeting" follows. Many of the speeches may be found in the Technical Section of the PAPER TRADE JOURNAL, and others will be published in succeeding issues.

"Safety and Efficiency Appliances for the Boiler Plant," by W. C. Edge, of the Paul B. Huyette Company.

"Trimbey and Tibbitts' Proportioning and Measuring System for Paper Stock," by E. J. Trimbey, of the Trimbey Machine Works.

"Rotary Filters for Washing of Paper Pulp and for Filtering and Washing Caustic Lime Mud" (illustrated), by George D. Dickey, of the Industrial Filtration Corporation.

"Efficiencies and Economies in Washing Black Liquor for Digested Soda and Sulphite Stock," by H. A. Morrison, of the Oliver Continuous Filter Company.

"The Merco Nordstrom Plug Valve," by L. D. Mills, of the Merrill Company.

"Testing Colored Materials for Fastness to Light," by H. S. Thayer, of the Atlas Electrical Devices Company.

"Instruments for Promoting Efficiency in the Paper Mill," by A.

E. Campbell, of the Schaeffer & Budenberg Manufacturing Company.

"The Carbon Dioxide Record of Combustion Efficiency," by C. C. Phelps, of the Uehling Instrument Company.

"Steel Belts and Their Application to Conveying Problems," by Harry Carlson, of Sandvik Steel, Inc.

"The Scott Evaporator as Used in the Pulp Mill for Recovering Soda from Spent Liquors," by H. Austin, of Ernest Scott & Co.

"Application of Recording Instruments in Pulp and Paper Industry," by L. G. Bean, of the Bristol Company.

Manufacturers' Exhibits

Among the 400 manufacturers of chemicals and equipment represented at this mammoth convention, the following are some of the more prominently known in the technical and industrial phases of paper manufacture, together with a brief description of the appliances featured in their exhibits:

Westinghouse Electric & Mfg. Co.

The display of the Westinghouse Electric and Manufacturing Company, conducted by S. H. Pittman, featured electrical devices for the paper mill and power plant, including safety switches, electric furnaces, space heaters, small induction motors, and Frankel solderless connectors. The booth was surrounded by miniature electric lamp posts, designed by the George Cutter Works, of South Bend, Ind.

Texas Gulf Sulphur Co.

The Texas Gulf Sulphur Company had an instructive exhibition of photographs, showing the methods employed in sulphur production. Several interesting photos were devoted to the world's largest block of sulphur, containing more than a million tons of brimstone and rising to a height of 55 feet. A. S. Cosler was in charge of the exhibit.

Thwing Instrument Co.

Dr. Charles Burton Thwing officiated over the booth at which various Thwing recorders and testers were demonstrated. Among other devices, Dr. Thwing pointed out the uses of Thwing Precision temperature and draft recorder for the paper mill power plant; the basis weight scale and moisture-test scale, and the Elmendorf paper tester.

Talc and Soapstone Producers' Assn.

The Talc and Soapstone Producers' Association, of Washington, D. C., conducted an interesting talc display, outlining its several uses in finished manufactures. Mr. Boardman, president of the Eastern Talc Company, was in charge of the booth.

Sandvik Steel, Inc.

A novel innovation was featured in the display of Sandvik Steel, Inc., where a miniature working model of the steel belt conveyor was presented on a scale of 1:20. An especially made, little steel belt was operated by a diminutive motor in the environment which would surround this attachment in actual mill use. H. Carlson directed the construction of the model and had charge of the demonstration.

Atlas Electric Devices Co.

The Atlas Electric Devices Company showed the efficiency of its "Fade-Ometer" in the testing of textiles and paper for color fastness. The display was the source of much interest due to the unique appearance of the device.

Nash Engineering Co.

Nash Engineering Company, of South Norwalk, Conn., featured an interesting display of "Hytor" vacuum pumps, which may be adapted to flat boxes in the paper mill as well as to felt or Fourdrinier wire machines. The exhibit, in charge of Mr. G. B. Wright and Thomas H. Savery, Jr., of Chicago, the Nash representative in the paper field, also included a working model of the company's dryer exhaust unit, which exhausts condensation and air from cal-

under rolls. This device consists of a combination vacuum pump and centrifugal pump, mounted on a single shaft and operated by the same motor.

Mathieson Alkali Works

The Mathieson Alkali Works, of 25 West 43rd street, devoted their booth to a model illustration of the Mathieson system for preparing bleach liquor from liquid chlorine. The demonstration pointed out the advantages in shipping chlorine in one-ton containers and mixing the liquor in submerged tanks in preference to the "tower" method. James H. MacMahon was in charge of the exhibition.

Pennsylvania Salt Mfg. Co.

The Pennsylvania Salt Manufacturing Company, of 41 Park row, New York, furnished an unique exhibit of industrial chemicals by means of a novel lighting effect. Large glass jars of sulphate of alumina, ammonia alum, caustic soda, and other substances were ranged on tables with a strong light illuminating the display from beneath. Cylinders of liquid chlorine served as gate-posts for the booth and a replica of the Liberty Bell was shown, made entirely from iron-free sulphate of alumina. R. James was in charge of the exhibit Tuesday and was succeeded later in the week by Mr. Bartlett, Mr. Butterworth and other officers of the company.

The Bristol Co.

The Bristol Company, of Waterbury, Conn., whose exhibit was in charge of C. H. Williamson, as well as several assistants, demonstrated the various uses in the paper mill of Bristol pressure gauges, thermometers, thermo-electric pyrometers, long-distance liquid level recorders, electric time recorders, etc. Among the features of the display were various sizes of motor-operated Bristol-Fuller valves, designed to effect considerable economy in the consumption of oil or gas.

Electro-Bleaching Gas Co.

One of the most interesting attractions was that of the Electro Bleaching Gas Company, 18 East 41st street, New York, which consisted of a model bleaching plant. The miniature was five years in process of construction and was complete to the most minute detail. The method of producing Bleached Liquor by Liquid Chlorine, a process used by 18 prominent paper manufacturing plants, was stressed in the company's exhibit. S. W. Jacobs was in charge.

B. F. Sturtevant Co.

Under Lucien Buck, manager of the Industrial Drying Department, the B. F. Sturtevant Company, 52 Vanderbilt avenue, New York, displayed various drying systems, including the Vapor Absorption System. This method of drying, according to Mr. Buck, is widely used, the system having, by a series of new patents, attained a perfection beyond that of any previous drying device.

Bausch & Lomb Optical Co.

Bausch & Lomb Optical Company, Rochester, N. Y., exhibited, through Carl L. Oswald, of Washington, two types of "Colorimeters"—machines to test color. They also presented a "Nephelometer," a device to examine paper fillers and sizes in the general grades of paper. Mr. Oswald also showed microscopic methods of measuring the length and width of fibers.

Yarnall-Waring Co.

The "V-Notch Meter," applicable to the measurement of black soda liquor and bleaching liquors, was demonstrated by the Yarnall-Waring Company, of Philadelphia. The company also displayed carbon dioxide recorders for use in the paper mill power plant. L. G. Chase, 90 West street, was the guardian of the Yarnall-Waring booth.

General Electric Co.

The General Electric Company made a feature of its safety controls and Solenoid Valves controlling the flow of liquids. Mr. Hol-

lister, of Schenectady, N. Y., and R. F. Newell and E. Von Steeg, of the New York office, demonstrated for General Electric. The company also pushed an electric boiler adapted for paper mill use in localities where water power is plentiful and more easily obtainable than coal.

The Container Club

A display by the Container Club, an association of 25 corrugated and solid-fiber box manufacturers, consisted of various types of corrugated packing boxes sent in by various members from all parts of the country. The demonstration was designed to show shippers how fiber and corrugated boxes are adaptable to shipping of all types of merchandise. The exhibit was conducted by J. W. Webb.

Technical Photographic and Microscopical Society

The Technical Photographic and Microscopical Society held its novel display under the direction of its founder, John H. Graff, of the Brown Company. Among the many exhibits were samples of photomicroscopic work in the analysis of wood fibers and the study of the elements of wood.

Diamond State Fibre Co.

Diamond State Fibre Company, 111 Broadway, New York, exhibited a line of sheet, rod and tube fibers, which was augmented by a display board showing many of the applications of these articles. The process of manufacture was described and demonstrated in detail. C. M. Bogart, the company's sales manager in the East, also showed "Celon," a new product extensively used in the radio field.

Morse Chain Co.

The biggest strand of chain used in power transmission—a strand with a three-inch pitch and twenty-four inches wide—was displayed by the Morse Chain Company. This booth also showed Jordan Pumps for paper machines, emphasizing the advantages of the Morse Rocker Joint. The "Rotoscope," a slow motion device of novel design, enabled those interested to make a close survey of Morse chains in actual use and while running at a high rate of speed. Mr. Anderson, the New York manager of the company, officiated at the Morse booth.

Price Increases on German Paper

German paper prices rose 15 per cent in July, over June, and an average per cent of 50 per cent more August 1. Printing paper advanced 45 per cent, and other grades from 50 per cent to 60 per cent. Further substantial increases are probable.

Aside from advances, reflecting inflation in coal, freights, etc., wood pulp is scarce. When the mark was 350 to 400 to the dollar, pulpwood cost 200 times pre-war. It has risen faster than mark has depreciated, though lumber trade is but slightly affected by increased production costs applying to other lines. State forest administrations have advised that they will follow price policy of private industry, and as this amounts to nullification of all anti-profiteering laws, there is no limit to what may be demanded for pulpwood.

Demand for paper in Berlin is active. Advances, however, are restricting new business. Some factories promise delivery only after five or six months. Little foreign business is on hand, as before recent drop in the mark home prices were close to international values.

Goes With American Paper Mills

Harry D. Craig, formerly assistant managing director of the New York Employing Printers' Association, has just joined the sales force of the American Paper Mills Corporation, who are removing from their quarters at 237 Lafayette street to larger ones at the corner of 27th street and Eleventh avenue.

FORMATION OF FROTH*

The formation of froth is one of the things that must be combated in the making of paper on the papermaking machine. This phenomenon is dependent on the composition of the paper stuff and on the treatment it receives before it comes to the paper-making machine. There are quite a number of factors which are of importance in promoting or retarding the formation of foam. Very often it is quite difficult for the papermaker to prevent this disadvantageous condition from arising in the process of manufacturing paper.

Formation of Froth Spots

Froth or foam consists of air bubbles, which are surrounded or covered with a slimy film. An analysis of this mass of air bubbles shows that it is constituted of fibers, rosin size, coloring matters, etc. On ashing a content of 3 per cent ash is obtained.

The formation of the froth takes place on the screen of the papermaking machines and also before the paper stuff reaches the same. When the resulting bubbles are not held back by the slices, then they reach the wire and hinder the felting of the fibers to produce a uniform sheet of paper. When the bubbles break, whether it be spontaneously or, for example, through the action of the dandy-roll, round, transparent spots—the so-called froth-spots—are formed on the paper, due to the fact that the bubbles do not contain a sufficient amount of fiber to fill up the hole, originally occupied by the bubbles before they broke.

Main Causes of the Formation of Froth

The principal causes of the formation of froth are enumerated as follows:

First. One cause for this phenomenon is to be found in the factory water. When mineral acids are added to this water, there will result an evolution of carbon dioxide in greater or less degree, dependent on the amount of calcium carbonate or magnesium carbonate that is contained in the water. These form on the surface of the paper and are covered with a film of fibers, size, etc.

Second. An excess of size will promote the formation of foam.

Third. Formation of foam will be enhanced by the reuse of the back water.

Fourth. The use of various dyestuffs in the coloring of the paper, such as Orange D, Scarlet and others, appear to promote the formation of foam.

Fifth. The same effect is produced when fresh pine-wood pulp is employed.

Sixth. A certain amount of froth will be formed when the paper stuff passes from one apparatus into the other. When the paper stuff is allowed to flow into a vessel rapidly or when it is permitted to fall into it from a height, it is very apt to entrain a certain amount of air. Such a condition is very propitious for the formation of foam, and should be avoided.

Seventh. When straw cellulose, which has been treated with steam, is employed in making the paper stuff composition, the danger of frothing is great.

Eighth. The heating of the paper stuff in the feed-box, a practice which is common, when working with very viscous paper stuff, will be very effective in promoting the formation of froth.

Ninth. Constant vigorous agitation of the paper stuff in the vats for a considerable length of time will also have the same result.

Tenth. When the agitator is rotated too rapidly, a layer of foam will be formed on the surface of the paper stuff.

Eleventh. Too rapid rotation of the knot catcher or too strong beating, shaking, etc., also conducive to the formation of foam.

Twelfth. In the hollander itself foam can be developed in the grinding of weighted paper stuff, animal sizing, etc.

There are still quite a number of other factors, which are of importance in this connection, but they do not possess sufficient weight to be treated any further at this point. The results of foaming are faulty paper, loss of cellulose, filling and coloring materials. In the case of the better grades of paper, the formation of foam-spots on the surface is quite a detriment.

Prevention of Frothing

If the frothing or foaming is to be prevented or decreased, it is first necessary to make a very thorough and careful investigation to determine what causes are present that give rise to this condition. In the first place the speed of the agitator is tested. This should not rotate any faster in any case than what is absolutely necessary to keep the paper stuff in suspension. The speed should not be greater than five revolutions per minute under any conditions of operation. In order to avoid the admixture of air with the stream of paper stuff, in running out of the vat into the sand catcher, it is essential that the stream is not made to fall quite a distance through the air. Rapid rotation or beating of the knot catcher is also to be avoided. In order to determine whether the formation of froth is due to an excess of rosin size, the back water is tested with litmus paper. An alkaline reaction indicates an excess of rosin size, and in that case the formation of foam is very apt to ensue. This condition can be remedied by adding a definite amount of alum or aluminum sulphate solution to the vat. The paper stuff should run quietly out of the feed box on to the wire screen. The slices serve to remove part of the foam that forms on the screen. Furthermore, spray nozzles are provided in front of and between the slices for the purpose of destroying the foam in this manner.

Frothing at the Dandy Roll

Then again frothing can take place at the dandy-roll. This can be prevented at this point by the use of a steam pipe, provided with fine openings, through which a fine spray of steam is played on the paper stuff. It is also possible to prevent the formation of froth in the course of the papermaking process by the admixture of a certain amount of oil, either of mineral or organic origin, with the paper stuff in the vats. However, it is necessary to exercise a great amount of care in carrying out this operation, for when too large a proportion of oil is used, spots are apt to be formed on the paper, and when these are once formed, they cannot be removed any more. About one liter of oil should be used for every 100 kilograms of paper stuff. Petroleum can also be used for this purpose, and in this case the proportions must be reduced to 100 cubic centimeters per 100 kilograms of the paper stock. If the back-waters from the papermaking machine are led into a funnel-shaped paper-stuff catcher, then in cases where the content of size in the paper stuff is very high, oil or petroleum can also be added at this point in order to combat the tendency of the material to foam.

E. W. Butt Resigns From Seaman Paper Co.

BUFFALO N. Y., September 11, 1922.—E. W. Butt, manager of the Buffalo territory of the Seaman Paper Company, has resigned his position.

The West Virginia Pulp and Paper Company, 200 Fifth avenue, New York, has increased its warehouse facilities by purchasing the six-story building located at 604-10 West 37th street from John S. Sills & Sons.

* Translated from *Wochenblatt fuer Papierfabrikation*, 1922, pages 1321-22, by Ismar Ginsberg, B. S. Chem. Eng.

Buy Your Kraft Pulp Now

**STÖRA
KORSNÄS
HUSUM**

May We Quote?

A. J. PAGEL & CO., Inc.

347 Madison Avenue

New York City

ORDERS ARE MORE PLENTIFUL IN THE PHILADELPHIA MARKET

Improved Market Is Due in Part, However, to the Liberation of Orders Which Have Long Been Held Up Because of the Uncertainties in the Coal and Rail Situation—Orders for Paper Stock Also Continue to Show Considerable Improvement—Pennsylvania Paper Products Co. to Occupy Building at Green Lane and Swickley Street as New Plant—Chas. Beck Machine Co. Busy.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, September 12, 1922.—Though there has been no marked increase in the activities of the Philadelphia printing and publishing trades, and while the market is still rather flat and there continues very active price cutting to get business, there came from them during the last few days before Labor Day, and particularly since that holiday, a very marked increase in orders. The distributors explain this improved market as due in part to the liberation of orders which have long been held up because of the uncertainties in the coal and rail situation, but even more so to the feeling of confidence among the publishers that fall business will be good, and their desire to protect themselves as far as possible against advance in prices and actual shortages. Out-of-town demand for fine papers continues to be better than that which comes from the strictly Philadelphia market. Book papers, plain and coated, and cover papers lead in sales. In the wrapping paper division, both No. 1 and No. 2 kraft are in better inquiry and all the cheaper grades are selling satisfactorily. A big business is being done in the whole line of building papers, roofings, sheathings and deadening felts. A continuation of brisk trading in these lines is looked for until the season brings building operation to a close.

The paper stock packers had a notably better market after Labor Day than before, although the former period was entirely satisfactory. While on nearly all grades outside prices prevail, increases in a number are imminent. Hard whites, which, because of sluggish mill demand and low prices have been put in storage, are now in some inquiry and are beginning to move millward.

Paper Men Return from Abroad

President Allen F. Whiting, of the Whiting Patterson Company, returned on Saturday last from a visit of several months abroad, touring England and France, through which he has journeyed on previous occasions, but more thoroughly on this occasion than ever before, and also taking in Switzerland. He made a division of his time between business activities and pleasure pursuits. He spent many days visiting the paper mills in England and France, featuring specialty productions like imitations of parchment, leather, mother-of-pearl and other papers with fancy surfaces, artistically colored, and used in the highest class of fancy box wrappings, the lining of envelopes and many other special purposes. Mr. Whiting found the English mills not very active, conditions there being about the same as in this country. The French mills, however, were all run to near capacity and most of them had advance orders assuring continuous activities for some time. While a large bouquet greeted the president when he reached his desk, the well wishes of his business family, in both Philadelphia and New York, were more cordially expressed at a testimonial dinner given in his honor at the Union League Club House on Thursday night.

After a two months' trip abroad, John K. Mohr, who recently opened a paper brokerage business with offices in the Liberty Building, has returned to the city, having made connections with English mills for the importation of a line of coarse papers. Mr.

Mohr sailed last June, and after spending the intervening time in visiting the paper mills of England and France and in pleasure trips on the Continent arrived in port recently on the *Aquitania*. He formerly was vice-president and general manager of the Reading Paper Mills Company, where he was connected for over 25 years, retiring last year from active service owing to illness. Last February he established his own business.

Paper Box Men Provide for Associate Members

Philadelphia Paper Box Manufacturers' Association held a special meeting in the Chamber of Commerce on Thursday night for the purpose of establishing an associate membership for supply men. Members of the Advisory Board, of which Walter P. Miller is chairman, consulted with twenty members of the anticipated auxiliary to the association. The supply men present at the meeting consisted of representatives of machinery, glue, paper box printing and board business. Among the paper houses represented was the Charles Beck Company, A. S. Datz & Son, Matthias & Freeman, A. Hartung Paper Service Company, Philadelphia Paper Manufacturing Company, Philip Rudolph & Son, Louis DeJonge, D. L. Ward Company, Garrett-Buchanan Company and the United Paperboard Company.

Charles Beck Machine Co. Busy

The Charles Beck Machine Company, 6th and Chestnut streets, has shown an increase of over 25 per cent in its sales of paper and box makers' machinery over the same season of last year. Recently a sheet cutter was installed in the plant of Renshaw, Jones & Sutton Company, of Los Angeles, Cal.; in the Missouri Paper Product Company, St. Joseph, Mo.; in the plant of Keussel & Esser Company, of Hoboken, N.J., converters of drawing papers, and a rotary board printing press in the Paperboard Corporation, of Tonawanda, N. Y. The latter concern was recently reorganized, having taken over the former Tonawanda Board Company. Maurice Simon is president of the newly organized concern.

Pennsylvania Paper Products Co. to Open Plant

A manufacturing plant has been taken by the Pennsylvania Paper Products Company in the three story building at Green Lane and Smickley street for the purpose of manufacturing paper cans with tin tops and bottoms adapted for fluids and grease materials and allied lines. The firm is a Pittsburgh corporation, of which J. Rodger Flannery is president, Axel Malin, vice-president and general manager and John M. Roney, secretary and treasurer. As soon as the installation of machinery is complete, the plant will be put into operation. The Pittsburgh headquarters are in the Vanadium Building.

General News of the Trade

Two days of golf, with all paper trade players, is the alluring program sent out during the week by the Philadelphia Paper Trade Golf Association for the annual tournament to be held on the green of the Merion Cricket Club, Ardmore, Pa., just outside of Philadelphia, on Tuesday and Wednesday, September 19 and 20.

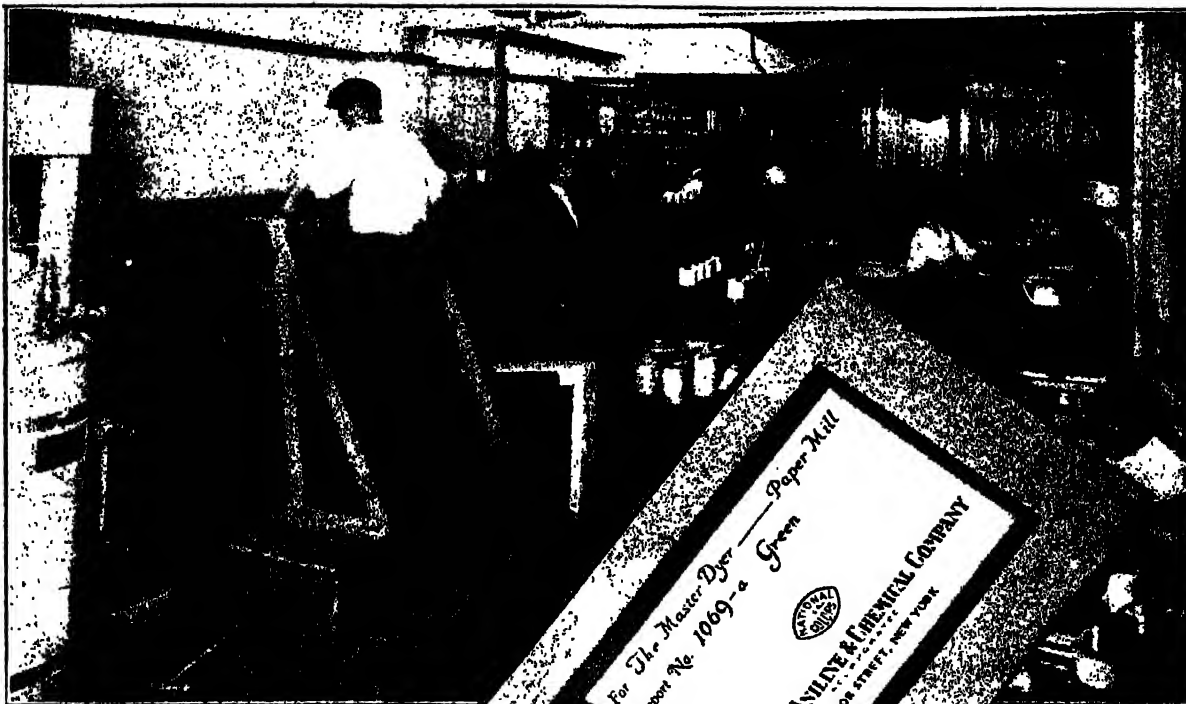
Robert J. Datz made his appearance during the week in the family of John A. Datz, head of A. S. Datz & Son, and both the young man and his mother are doing very well.

The Enterprise Paper Company, 3rd and Callowhill streets, has taken the agency for Eastern Pennsylvania for the well-known O W D products.

E. N. Renner, Philadelphia representative of Charles W. Williams & Co., New York, with offices in the Bourse, has returned to his desk from a vacation at Wildwood.

Roger Fuller, of the Frank Gilbert Paper Company, and Vincent Williams of the Becket Paper Company, were Philadelphia visitors during the week.

The D. L. Ward Company has resumed bi-monthly publication of the *Wardco Bulletin*. It was the first house to go on a Saturday (Continued on page 30)



A Definite Answer to Any Specific Problem in Paper Dyeing

Every color match that is worked out is submitted to the customer in a booklet containing formula, dyeing instructions, dyed samples, and original sample.

Every dyer knows the value of a practical working laboratory. But not every dyer has the facilities at his command to work out formulas and methods of color application that are required in the development of new shades and particular effects in paper manufacture.

The "National" Paper Laboratory is operated as an important part of the service to which users of "National" Dyes are entitled.

Here you will find specialists in paper dyeing who are constantly engaged in finding the right answer to every problem submitted to them—an answer expressed in proved formulas, supported by dyed samples and definite working instructions.

You are invited to use this laboratory freely.

National Aniline and Chemical Company, Inc.

<i>New York</i>	<i>Chicago</i>	<i>Charlotte</i>	<i>Toronto</i>	<i>Philadelphia</i>
<i>Boston</i>	<i>Hartford</i>	<i>Montreal</i>	<i>Providence</i>	<i>San Francisco</i>

PAPER BUSINESS IMPROVING IN THE MARKET AT TORONTO

Better Demand Is Experienced for Most Lines—Reductions Are Announced on Cover Paper and Tag Manila—Board Prices, However, Have Been Advanced and Another Increase Is Expected Within the Next Few Days—Big Concerns Are Preparing to Cut More Pulpwood This Season Than in Several Seasons Past—Mattagami Co. to Utilize Waste Wood for Fuel.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 11, 1922.—The paper market picked up considerably during the past week; whether the increase in trade will continue remains to be seen. The Canadian National Exhibition is no doubt responsible for considerable of the augmented activity owing to the great amount of printed matter that has been and is being put out by merchants and manufacturers. During the last few days there was a reduction of about ten per cent in all lines of cover papers, while tag manila is now selling at \$5.10 to jobbers.

The wholesalers have been busy introducing the long price list. It is too early as yet to comment on the result but printers have been clamoring for the system for some time and, it is thought, several misunderstandings and practices, which crept into the paper business, will be eliminated by its inauguration. Lists are now issued by the jobber who quotes twenty-five per cent above the wholesale price on orders to all customers except to the printing trade, or where the purchaser uses the material on his own equipment or his own premises. The printers get twenty per cent off list prices and, on all known sales direct to outsiders by jobbers, the printers are given a credit for this amount.

On bonds, and flat papers, where a certain fixed figure used to prevail for ream, case or ton lots, the following discounts now hold—reams, less twenty per cent off list; cast lots, twenty and five, and ton lots less twenty and fifteen.

The paper bag business is very good and the following discounts prevail—light manilas, 60, 7½, 8½ and 5; heavy manilas, 60; light kraft, 60 and 7½; heavy kraft, 50 and 10; white bond, 17½ and 10. There are no changes in wrapping paper prices. Toilet and tissues are in fair demand and manufacturing stationers and envelope makers report an improvement in trade, while coated paper plants acknowledge that things are getting much better with them after a rather quiet summer.

Will Utilize Waste for Fuel

An application was made in the courts last week on behalf of G. T. Clarkson, receiver, for the Mattagami Pulp and Paper Company, Toronto, whose plant is at Smooth Rock Falls, Ont., for authority to install new grates in the mills. In view of the coal shortage it was said that it was necessary to use some other fuel and it was found that a new style of grate would enable the mills to burn the bark from the pulp wood that had hitherto been waste. It was stated that the grates would pay for themselves and that a big saving could be effected by installing a newly invented furnace that would utilize surplus waste power for heating purposes. The cost of the furnace would be about \$15,000. The debenture holders consented to the application and Justice Mowat, in giving authority for the new installations to be made, said that he thought that Mr. Clarkson, the receiver, was not a man who would fall for the idea of faddism.

Board Prices Advancing

Board mills are exceptionally busy at the present time and owing to the shortage in coal and the ascending price of raw materials, prices are going up. A few days ago there was an advance of ten per cent which held good only a short time and now all quotations have been withdrawn. It is expected there will be another raise of,

at least, ten per cent during the coming week. Plants are working to capacity and paper box factories have all the business they can attend to. Some have enough orders to last for a couple of months.

Pulpwood Cut Will Be Enlarged

There is every prospect that pulpwood will be cut in larger quantities by the big companies during the coming season than for some time past. Many concerns have already entered into big contracts as their stocks of priced pulpwood have been pretty well consumed. While prices are firmer there has not been any decided advance but one is looked for, if the demand for news print and pulp, which is improving all the while, is maintained. Most concerns will be governed by developments during the next sixty days. Shipments on contracts with paper mills across the border which have been made for the coming year, will commence early next month.

Notes and Jottings of the Industry

C. Nelson Gair, sales manager of the Don Valley Paper Company, Toronto, spent the past week in Montreal calling upon the trade. J. F. McKenzie, superintendent of the plant, is spending his holidays in St. Catharines.

C. A. House, of London, Eng., publisher of the *Poultry World*, who has been on a trip to Australia, New Zealand and the United States, was in Toronto during the past week and called upon a number of members of the paper trade.

A. M. Barkwell, of the Barkwell Paper Company, Winnipeg, was among the visitors to Toronto paper houses during the past week.

The Pacific-Burt Company, Limited, Toronto, has declared a dividend of one and three-quarter per cent on preferred stock for the last quarter.

Fred W. Halls, of the Fred W. Halls Paper Company, Toronto, who with his family, has been spending a holiday at his summer home on Sturgeon Lake, has returned.

MORE ORDERS IN PHILADELPHIA

(Continued from page 28)

opening basis immediately after Labor Day, the store remaining open until one o'clock, whereas during July and August it closed at noon. The Saturday morning sales meetings also have been resumed. John Conradi returned during the week from a vacation at Cape May with his family.

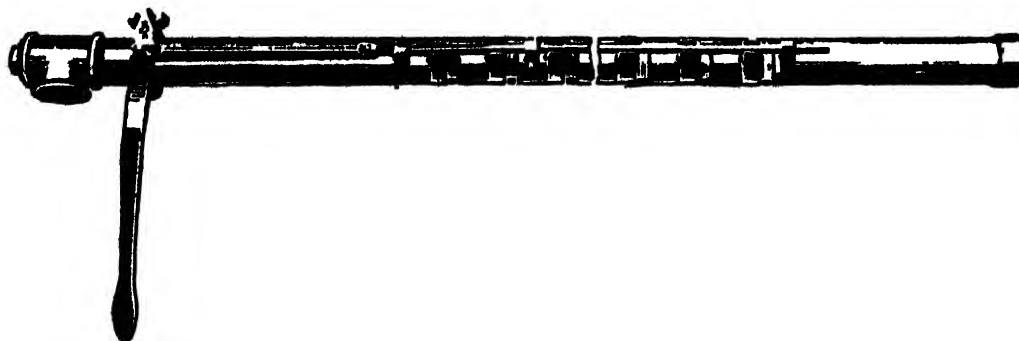
F. A. O'Neill has purchased a home, built in Spanish style, at 133 Pelham road, Germantown, containing 14 rooms, on a lot 70 by 210 feet, for \$40,000. He will occupy the property as a residence.

Assistant Secretary-Manager Banister, in charge of the newly organized Waste Paper Division of the Typotheta of Philadelphia, is sending out checks for the August collection. Their aggregate shows an increase in dollars and cents of almost 25 per cent over July, and with prices considerably advanced, a fact attributed by the division to its activities rather than to the rise in the value of paper stock generally.

The Miquon Mills, of the W. C. Hamilton Sons Company, are now running to almost capacity and business is better than it had been for over a year and a half. It is planned soon to put operation at capacity. A new booklet of samples of ledgers, writing and book papers is now ready for distribution to the jobbing trade, and they show an increase of one-half cent per pound on the full line, which the firm claims was necessitated by the high cost of fuel.

John Stuckey is now covering the box trade, as well as the sales of flat papers, for the Welsh Paper Company, 701 Chestnut street, taking care of a field formerly covered by Adolph Wilkins, who recently resigned from the firm to enter into the partnership with Thomas F. Pinder, Camden, N. J., who took over the coating plant of the Locke Company. He will be assisted by Joseph Hylton.

Procter & Schwartz, Inc., 7th street and Tabor road, manufacturers of pulp machinery, have taken over the business interests of the Smith & Furbush Machine Company, manufacturer of textile machinery, Hancock and Somerset streets.



Let it Save Water for You

The BIRD SELF-CLEANING SHOWER PIPE is so designed that it can be instantly cleaned of all materials which might stop up the holes. This permits the use of white water.

By using the BIRD SELF-CLEANING SHOWER PIPE with white water you can:

1. *Save stock.*
2. *Save water.*
3. *Facilitate waste water purification.*

The BIRD SELF-CLEANING SHOWER PIPE operates like ordinary shower pipes with but one exception—move the handle and the shower pipe cleans itself.

Let us send you one on trial.

BIRD MACHINE COMPANY

SOUTH WALPOLE

MASSACHUSETTS

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Canadian Builders of Bird Machinery,
Canadian Ingersoll-Rand Co., Ltd.,
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Montreal, Canada

BIRD *self cleaning* SHOWER PIPE

QUEBEC GOVERNMENT GRANTS REDUCTION IN TIMBER DUES

New Order in Council on This Subject Is Issued Following Representation of a Delegation of Pulp and Paper and Lumber Men—Annual Report of Spanish River Pulp and Paper Mills, Ltd., Just Issued Is Considered Very Satisfactory—Price of Waste Paper in Past Six Months Advances from 10 to 20 Per Cent—Prizes Awarded in Forestry Essay Competition.

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 11, 1922 Following the representation of a delegation of pulp and paper and lumber men, the Quebec Government has issued an Order-in-Council, dated August 30, making reductions in timber dues. The Order-in-Council reads as follows:

"Whereas, owing to the financial crisis now prevailing and especially in the timber industry, it is expedient to modify temporarily the provisions of the Order-in-Council of October 6, 1920, respecting timber cut under the conditions mentioned below, so as to encourage licensees to provide employment for lumbermen during the coming winter. That it is expedient, for the same reasons, to cause the exploitation of burnt timber or timber damaged by insects, and that a reduction of timber dues should be granted.

"It is ordered that the Order-in-Council of October 6, 1920, be temporarily modified in favor of the licensees who shall cut, from this date to May 1, 1923, at least 25 per cent of the total amount of their respective cuts of timber for the season of 1920-1921, or of their last year's lumbering operations previous to that season, if they have not operated during 1920-1921, and that the dues on the timber so cut be calculated according to the provisions of the Order-in-Council, No 765, of June 13, 1918

"That there shall be charged on the burnt timber cut between this date and May 1, 1923, a rate of \$1.75 per thousand feet, board measure, for white pine; of \$1.50 per thousand feet, board measure, for red pine, elm, ash, basswood, maple, larch, and tamarack, and of \$1.25 per thousand feet, board measure, for spruce, balsam, gray pine, hemlock, white birch, aspen, cedar, etc."

Spanish River's Annual Report

The annual report of the Spanish River Pulp and Paper Mills, Limited, just issued, is considered very satisfactory. It covers the twelve monthly period ended June 30, 1922, over one-half of which was marked by acute business depression in the pulp and paper industry, and shows a surplus after meeting all charges and the payment of the regular dividends, together with constructive changes in its balance sheet.

The report shows earnings equivalent to 8.07 per cent on the common after figuring as a prior charge the appropriation of \$317,766 for the bond sinking fund reserve. It is contended that this charge might be properly made upon the consolidated surplus account, in which event the earnings would be equivalent to 11.6 per cent on common.

Besides the usual preferred and common dividends, there is a bondholders' dividend of \$137,005 taken into account, making the total appropriations for the year \$1,687,821, as against net income of \$1,784,917.

Operating earnings for the year fell about \$1,475,000, compared with the preceding year, which, it will be recalled, represented a period of general higher prices. Interest charges increased slightly, but the appropriation for taxes and contingencies were down from \$500,000 to \$150,000. Net profits dropped from \$2,963,150 to \$1,784,-

917. The surplus carried forward amounted to \$97,096, compared with \$1,288,998 in the preceding year.

The profit and loss accounts for the past three years compare as follows:

	1921-1922	1920-1921
Net earnings	\$3,361,537	\$4,836,001
Depreciating reserve	475,975	628,480
Interest	\$2,885,562	\$4,207,521
Net surplus	950,645	744,371
Contingencies and government taxes	\$1,934,917	\$3,463,150
Balance	150,000	500,000
Bondholders' dividend	\$1,784,917	\$2,963,150
Balance	137,005	137,005
Preferred dividend	\$1,647,912	\$2,826,145
Net profit	603,365	603,365
Common dividend	\$1,044,547	\$2,222,780
Balance	629,685	629,685
Bond sinking fund reserve	\$ 414,862	\$1,593,095
Surplus	317,766	304,097
Previous balance	\$ 97,096	\$1,288,998
Profit and loss balance	2,349,796	1,060,798
	\$2,446,892	\$2,349,796

The balance sheet shows that the company continues to operate under the auspices of a favorable net working capital position. The total is not quite as large as a year ago, but remains at the substantial amount of \$6,542,703, compared with \$7,316,535 in the preceding annual report.

The principal change among current liabilities is the reduction of bank loans from \$3,000,000 to \$1,800,000, and accounts and bills payable from \$3,076,594 to \$1,721,761, the total being reduced from \$6,734,685 to \$4,172,071.

In his remarks to shareholders President Mead says: "The New Hydro Power development at Smoky Falls, on the Sturgeon River, has been completed and the first two units, comprising approximately 5,000 electrical horsepower were put into operation in November, 1921. The other two units of like capacity are available for immediate use as may be required. The development provides ample power for the Sturgeon plant and the investment has proved to be a very valuable asset to the company.

"In view of the general trade depression and declining prices for the company's product, it should be gratifying to the shareholders to know that the net earnings have been sufficient to meet all fixed charges and that, after payment of preferred and common dividends, a surplus remains to be added to the reserve."

New Mill to Start in January

Denaston Breakey, one of the promoters of a new pulp and paper mill at Three Rivers, states that the mill is now under construction and will probably start operations in January. He states that almost the entire supply of pulpwood will come from the company's freehold land, known as the Breakey Limits. The company now has a contract to supply some 50,000 cords a year for the next 20 years, which will produce some 45,000 tons of paper. The company expects to employ from 1,500 to 2,000 men.

Waste Paper Price Advances

An indication of the trend in the industry is seen in the advance in the price of waste paper. In the past six months the market for

(Continued on page 34)

FOR QUALITY PAPERS USE

A-1 BLEACHED SULPHITE PULP

MANUFACTURED BY

Kellner-Partington Paper Pulp Co., Ltd.

Borregaard

Norway

SOLE AGENTS FOR U. S.

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21 East 40th Street

New York, N. Y.

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KRAFT PULP

*Uniform in Quality
Essential for Strength Requirement*

The Pulp and Paper Trading Company

21 East 40th St., New York, N. Y.

Sole Agents for United States for
CANADIAN KRAFT, Ltd. **Three Rivers, Canada**

Obituary

James A. Muir

MORRISTOWN, N. J., September 12, 1922.—James A. Muir, one of Morris County's well-known citizens and lifelong board makers, died at his home at 51 Elm Street, Morristown, Friday, September 1. He was born at Chatham, June 8, 1846, of a family of paper makers, and followed that business from boyhood. In 1875 he established his mill near Whippany, manufacturing a grade of board specialties



JAMES A. MUIR

that has become nationally known for its quality, and achieving a record of never closing down for lack of orders for forty-seven years.

Mr. Muir was active in business affairs until the last few months before his death. In 1877 he married Miss Carrie Van Arsdale, of Newark, who died in 1915. He is survived by four sons, Frank W. Muir, Louis Muir, William E. Muir, who established the Muir Board Company, Inc., of Lyndell, Pa., and James A. Muir, Jr., present manager of the mill at Whippany, two granddaughters, a brother and four sisters. Funeral services were held at his late home on Monday, September 4, and interment was made in Fairgreen Cemetery.

REDUCTION IN TIMBER DUES

(Continued from page 32)

waste material has advanced in price from 10 p. c. to 20 p. c. A year ago this market was in many respects below normal, this being simultaneous with the depressed conditions of industry, and the present advance keeps pace with improved commercial conditions. It is pointed out that the price of waste material such as waste paper and rags of various descriptions does not depend upon supply to the same degree as material manufactured for consumption. Price depends upon demand, the material being waste, and the advance of 10 p. c. to 20 p. c. in price is a certain indication of industrial improvement.

Forestry Prizes Awarded

By the unanimous decision of the judges, Messrs. Gilbert, Howe, Fitch and Wilson, the first prize of \$2,000 in the contest arranged by Frank J. D. Barnjum, of Montreal, for a practical suggestion for the suppression of the spruce bud worm, bark beetle and borer, was awarded to O. Schierbeck, forest engineer for Price Bros. &

Co., Limited, Quebec, whose paper on the subject was the best effort of the 230 presented. The balance of the prize, namely, \$3,000, was divided equally, or \$1,000 each to Doctors Swaine, Craighead and Tothill, of the Forest Insect Branch of the Entomological Department, as a reward for the untiring efforts of a small body of loyal, conscientious, overworked and underpaid Government officials who are giving the best years of their life for the suppression of the forest insect peril in Canada, and from the fact that much of the information contained in papers presented was based on the results of their good work, and as no one paper qualified fully for the prize, Mr. Barnjum, with the hearty approval of the judges, felt this would be a generous disposition of the prize money. Mr. Barnjum states that much valuable information on this important subject has been collected, which will be given to the world free, with full credit to the authors who deserve and will be accorded the earnest appreciation of the people of the whole continent which is so seriously menaced by these insect pests.

News of the Boston Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 11, 1922.—Conditions in both the fine and the coarse paper and box board divisions of the paper trade in the Hub have been unsteady for the past two or three months due to the unstable prices, sultry weather during the summer months and breaking up of sales forces during vacation periods.

However, with practically all of the sales and office force members back now, the paper men look for a decided improvement in both number of orders and in size of individual orders. In spite of the many disturbing forces, there has been a continuous although slight upward trend in conditions.

The gradual withdrawal of prices by the manufacturers of fine papers, as well as the manufacturers of kraft, has been followed with a refusal on the part of several of the mills to accept orders on future delivery. Boston merchants all report that prices now being quoted are those determined on delivery of the separate orders.

The Great Northern Paper Company of Maine have been advertising for several weeks in this city for laborers to work on the new piece of state road which it is constructing in Maine.

W. H. Claflin & Co., Inc., of Summer street, are offering Elite white wove XX envelopes, high cut, for \$1.25 per thousand, \$1.18 in ten thousand lots and \$1.09 in case lots of fifty thousand. The 6¼ envelopes are offered at 5 cents per thousand less. The company also is offering Trix white wove XXX envelopes, high cut, at the following prices: \$1.40 per thousand, \$1.30 per ten thousand lots and \$1.20 in case lots of fifty thousand, with 6¼ at 5 cents less per thousand. Triton Bond is one of the papers which the Claflin Company is specializing on at present. This paper, manufactured in white and six different colors, makes an attractive bond paper at a reasonable price. The colors are buff, blue, golden rod, green pink and canary, and three whites are offered.

Diffuser Explodes at Advance Pulp Plant

[FROM OUR REGULAR CORRESPONDENT]

HOWLAND, Me., September 11, 1922.—The explosion of a diffuser occasioned a property loss of several thousand dollars at the sulphate mill of the Advance Bag and Paper Company at Howland at 10 o'clock Thursday night. There is no knowledge of the exact cause of the accident, which is of rather an uncommon type and might have been caused by over-pressure or a number of other causes yet to be determined.

The explosion was a serious one and wrecked a portion of the building but fortunately there was no loss of life or even injuries, although three men were working in the room at the time. The accident will shut down the sulphate department until repairs are made but will not cause cessation of work at the mill. The exact extent of the damage cannot be ascertained until the wreckage is cleared away.

**Progress
and
Paper
Making**



No. 6

Messages Across Space and Time

The savage who beats a war drum sends a message across space. The cave man who painted his wall has sent us a message across time. But it requires paper and printing to send many messages across both *space* and *time*.

Pick up a book and read a play of Shakespeare's. You have discounted three centuries of time and three thousand miles of space. And a million other men can do the same thing at the same moment. Paper made this possible.

The last check you cashed was part of an intricate system of conducting business every step of which was facilitated by the use of paper.

The inscription on the new Post Office Building in Washington applies with singular aptitude to paper:

"Carrier of news and knowledge, Instrument of trade and industry, Promoter of mutual acquaintance, of peace and good will among men and nations. Messenger of sympathy and love, Servant of parted friends, Consoler of the lonely, Bond of the scattered family, Enlarger of the common life."

HAMMERMILL PAPER CO., Erie, Pa.

NEW YORK OFFICE: 291 BROADWAY

New York Trade Jottings

L. M. Alexander, president of the Nekoosa-Edwards Paper Company, of Port Edwards, Wis., was among the New York trade visitors Friday and Saturday of last week.

* * *

The Heller & Merz Company announces that its representative, John H. Loomis, has been transferred to its New York office. Arthur C. Loomis, his brother, will take his place.

* * *

John F. Carroll, of the Whalen Pulp and Paper Mills, Limited, Port Alice, B. C., was in New York last week. Mr. Carroll, who was on a business trip for his company, left for Canada last Monday.

* * *

"After a period of adversity lasting more than a year and a half," says a recent article in the *New York Journal of Commerce*, "International Paper Company appears to have most of its troubles behind it with better sailing ahead."

* * *

The Alling and Cory Company, of 313-321 West 37th street, New York, has just issued a descriptive sample booklet describing its "Uncle Sam Bond." The company recently moved from its old headquarters at 461 Eighth avenue.

* * *

The Royal Card and Paper Company, of 132-36 West 14th street, New York, has recently issued a price list on "Clarion" book and writing papers. Accompanying the list are attractive sample sheets demonstrating the effects which may be obtained in printing on the various grades.

* * *

The Interstate Commerce Commission has announced that a hearing will be held on September 18 in New York before Examiner Beach of the commission in case No. 13,867 of the International Paper Company against the director general. A hearing will also be held on the same date in case No. 13,877 of the Tidewater Paper Mills against the Bush Terminal, et al.

* * *

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, 18 East 41st street, New York, recently returned from his European tour, was impressed with the engineering basis upon which the greater part of Scandinavian and Finnish paper and pulp manufacture is carried. The bulk of the business, he observed, was in the hands of technical men. Dr. Baker was also struck by the extent to which the men in charge of European plants have traveled in the United States. Not only have many of them received part of their education in this country, but a surprising number speak English fluently. He advises young paper men in the United States to spend a year or more in Scandinavia for the broadening effect it will have upon them.

* * *

"After 28 years' affiliation with the Heller & Merz Company William J. Robertson retired on August 31. His many business friends and acquaintances will be interested to know that he expects to enjoy, in the near future, many long anticipated tours of rest and pleasure, both in this country and abroad. His associates in the New York office of the company expressed their sentiments of bon voyage to him in person on August 31 when they presented him with a traveling case with all appointments for convenience and comfort. Eugene Merz made the presentation and as a further token of his esteem, Mr. Merz personally presented Mr. Robertson with a beautiful watch. The sincere wishes of his friends as well as these concrete remembrances will accompany him on trips full of interest and keen enjoyment.

Recent Incorporations

JONES & LEIGH MANUFACTURING COMPANY, Manhattan, New York, make paper, capital \$100,000; G. L. Leigh, W. A. Simon, H. A. Jones. Attorney, L. I. Geber, 291 Broadway.

TRINITY CORPORATION, Dover, Delaware, capital \$6,000,000. Boyce & Magee, Dover.

CHINA FIBER CONTAINER COMPANY, Wilmington, Delaware, manufacture paper and pulp boards, capital \$250,000. Corporation Trust Company of America.

DIXIE WAX PAPER COMPANY, Dallas, Texas. Capital, \$20,000. Incorporators: R. G. Smythe, G. C. Embry and J. M. Irwin.

UNITED STATES PAPER MANUFACTURING COMPANY, Baltimore, Maryland. Capital, \$3,000,000.

SHIELBY PAPER BOX COMPANY, Memphis, Tennessee, Capital, \$200,000.

JONES BROS. COMPANY, Manhattan, New York, make paper boxes. Capital \$10,000. Incorporators, M. Jones, L. Reiss, I. Berkowitz. Attorneys, Basch & Kulkin, 1265 Broadway.

ALLIED PAPER PRODUCTS, Philadelphia, Pennsylvania, manufacture. Capital \$50,000. Corporation Guarantee and Trust Company.

News of the Chicago Trade

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, September 12, 1922.—Howard S. Greene, who resigned as manager of the advertising and sales promotion departments of the Diem and Wing Paper Company, has been appointed publicity director of the Cincinnati Chamber of Commerce.

A new corporation, known as the "Consumers' Paper Stock Company," has been incorporated with a capital of \$10,000. The new company will be located at 729 South Clinton street, Chicago, and deal in waste paper materials and will manufacture products therefrom. The incorporators are J. H. Optner, L. L. Kahn, S. B. Optner, F. A. Fischel, correspondent, Fischel & Kahn, 111 West Monroe street, Chicago.

A. E. Fuhlage, of the Pekin Paper Company, St. Louis, called on all the paper trade in Chicago during the past week.

Chicago Paper Company, 801 South Wells street, and The Paper Mills Company, 517-525 South Wells street, are advertising in all the Chicago papers the S. D. Warren Standard Printing Papers. The S. D. Warren Company is holding a campaign for better paper and better printing. "Make It Easy to Plan Printing" is the title of a series of books on better direct advertising which printers and advertisers can secure on application to distributors of Warren's Standard Printing Papers.

A fire, apparently starting in the Peter Heer paper box factory, 62 West Kinzie street, Chicago, caused damages that were estimated at \$150,000 by Shirley T. High, fire attorney.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 13, 1922.—The purchasing officer of the Government Printing Office will open bids on September 20 for 23,750 lbs. (475 reams) 29 x 41—50 No. 1 White Machine Finish Printing Paper.

Bids will be opened at the Government Printing Office on September 20 for 172,000 lbs. (2,000 reams) of 38 x 48—86 White S. & S. C. Printing Paper.

George LaMont & Son have been awarded the contract by the purchasing officer of the Government Printing Office for furnishing 1,095 pounds of 21 x 3243 No. 24 green safety writing paper at \$238 per pound, bids for which were opened on August 21.



The Beloit Cutter

**A Machine evolved for the heavily
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Container Trade.**

**A Cutter with years of experience
packed into it.**



BELOIT IRON WORKS
BELOIT, WISCONSIN



TENTATIVE REPORT ON PAPER STANDARDIZATION*

NOTE. In connection with the appended report the Bureau of Standards would be glad to receive comments.—EDITOR.

The following is a tentative report, submitted by the Technical Committee, appointed by the Bureau of Standards, in connection with the Standardization of Paper. R. S. Hatch, chairman; F. C. Clark, F. A. Curtis.

I. Introduction

This committee was asked to consider and make recommendations to the Bureau of Standards in regard to the following subjects: (1) Specifications of quality, (2) the testing of paper, (3) the sampling of paper for test, and (4) tolerances. The present report is of a preliminary nature, taking up those phases of these subjects on which agreement may be obtained at this time. Due to the lack of attention to these subjects by the paper industry, it is believed that these suggestions be considered tentative until criticisms have been received from a larger group of paper manufacturers.

II. Specifications of Quality

It does not seem feasible at the present stage of the paper industry to make any definite recommendations as to specifications of quality for paper for commercial use at this time. Neither are test methods sufficiently standardized nor are a sufficient number of mills under technical control to warrant this step at this time. In addition to this, it is the belief of the committee that there are not enough data available to indicate generally the test necessary to determine the quality for a particular use of the paper. In view of these facts, the committee makes no suggestions as to definite specifications of quality at this time, but does believe that this subject should be taken up and that specifications for particular papers for particular uses be developed. The following are examples of papers of this character: Blue print paper, filter paper, paper for bags for carrying materials such as lime, cement, sugar, etc., paper for wrapping foodstuffs, insulating papers, etc.

III. The Testing of Paper

1. **GENERAL.**—The technique of the testing of paper in this country has not as yet been thoroughly standardized and is not recognized as of much importance as in the case of other materials. Various methods have been proposed for determining the several qualities of paper, but the industry has not any official methods of testing paper. This has been recognized by the Technical Association of the Pulp and Paper Industry and steps are now being taken to prepare standard methods of testing.

The experience, however, of the members of this committee with the various methods of testing paper makes it possible for committee to offer tentative suggestions which may later be studied by the proper committee of that association and a method finally developed and approved by that association.

The descriptions and methods given are for use in paper testing laboratories where accurate data are desired and, therefore, these methods may be somewhat modified for mill control work, where quick relative results are of greater value than excessive accuracy.

The test sample is described and defined under the portion of the report entitled "The Sampling of Paper for Test."

"1. **Paper Testing.**—(Extract from Report of Paper Testing Committee of the T. A. P. P. I.) (PAPER TRADE J., July 6, 1922, p. 48.)

"1. **PURPOSE.**—The testing of paper is performed for three reasons and it is possible that methods suitable for one purpose may not be suitable for another. These purposes are (a) to study the manufacture in order to improve the quality, (b) to maintain a pre-

determined quality, and (c) to determine whether the quality is equal to a predetermined standard or specification. The manufacturer is interested chiefly in (a) and (b), while the user or buyer is interested in (c), when paper is bought on specification. It is obvious that various methods may be developed for use in mills that are entirely satisfactory for the development of quality and for maintaining that quality. It is thought, however, that the methods used by testing laboratories in connection with the purchase of paper on specifications, should be so defined and standardized that comparable results will be obtained by different laboratories. The methods herewith given are in some cases merely tentative suggestions which cannot be accepted as standard without further investigation. It must be understood, however, that in determining what tests to make that the purpose for which the paper is to be used is of primary importance, and that that test should be used which will indicate the quality that is specifically desired.

"2. **DEVELOPMENT.**—Paper testing has developed rather slowly in this country and many of the methods are of foreign extraction, as are some of the instruments and apparatus. However, a considerable amount of development has taken place and there are a greater number of methods now available. This development has not, however, been in any systematic manner and has been spread over the whole field of testing, to meet special conditions. A systematic study should be made and standard methods developed and used.

"3. **GROUPS OF METHODS.**—For convenience, the various methods of testing are grouped into three classes: microscopical, physical and chemical. In most cases, some of the methods from each class are necessary. It is obvious that all the tests indicated are not necessary in any one particular case, but such tests should be used that will indicate the quality of paper necessary for a particular purpose.

"4. **RECORD CARDS.**—Complete laboratory records should be kept of all tests (especially original data) and in such a manner as to be always available. The accompanying 5x8-inch record, with both sides reproduced, is offered as a suggestion, though individual requirements may necessitate certain alterations.

"5. **SAMPLING.**—The proper sampling of paper for test or the interpretation of the test data in connection with sampling has been neglected. It is pointed out, however, that no test data is more accurate than the sampling. This applies with especial force in connection with the testing of a shipment of paper to determine whether it conforms to a definite specification. It is obvious that cases, bundles, frames, rolls, etc., must be sampled differently, but as much care should be exercised in this connection as in the sampling of wood pulp for moisture.

"6. **TOLERANCES.**—The value of the test data is accurate only when a large number of tests are made or when proper tolerances are allowed. This tolerance is necessary, due to the errors which are inherent in the whole process of paper testing. The errors are introduced (a) by improper or incomplete sampling, (b) by the natural lack of uniformity in paper, due to its structure, and (c) by the error of the apparatus or method of testing which may either be inherent in the apparatus or due to improper manipulation.

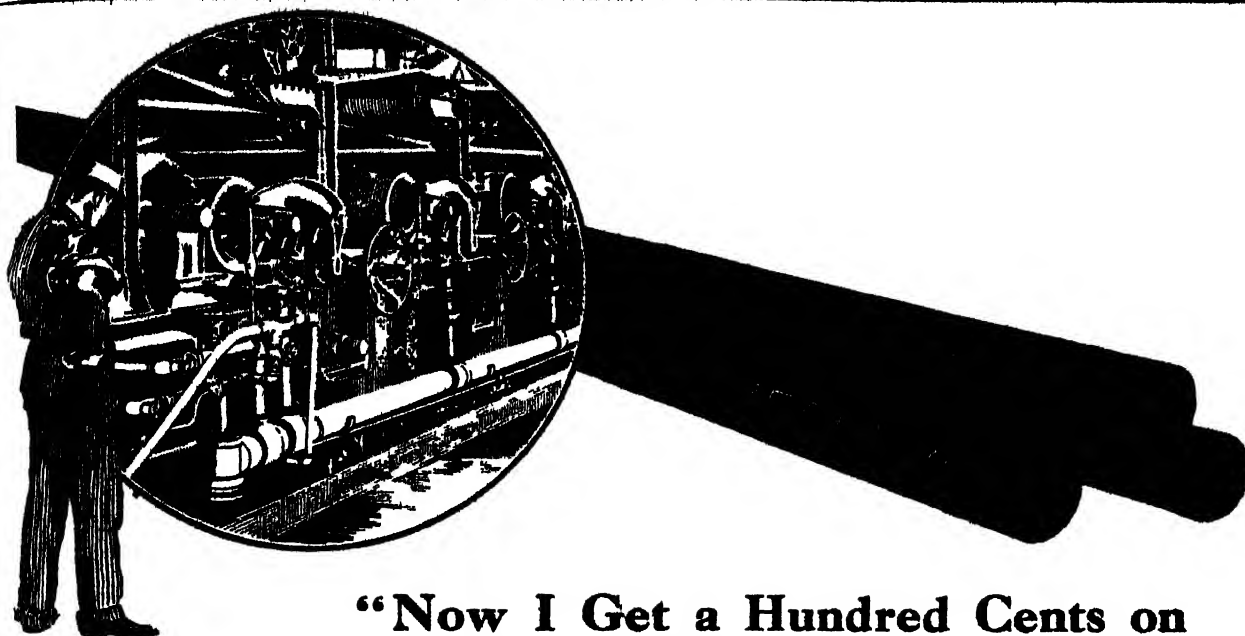
"7. **TEST SAMPLE.**—The original sample, obtained by proper sampling should be sufficiently large and of enough sheets to enable all the proposed tests to be made without recourse to an additional sample. The various tests should be made on the several sheets of the sample in order to obtain a reasonably fair average.

2. **WEIGHT.**—Definitions:

(a) **Ream weight.**—The weight of a given sheet of paper is the weight of a ream of that paper of a given size, expressed in pounds.

(b) **Basis weight.**—The basis weight or "substance" of a sheet of paper is the weight of a ream of that paper of a size dependent upon the kind of paper in question. This size is different for book

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"Now I Get a Hundred Cents on Every Dollar's Worth of Pipe"

"For years, I bought pipe carelessly—the contract going to the lowest bidder. All pipe was the same to me—there was no difference. That was the case for several years—then the trouble began. Ill fitting joints began to leak. Corrosion made necessary costly replacements. Production was held up here and there. Maintenance costs were out of reason. *Something had to be done.*

"I got in touch with superintendents of other mills. One claimed to know about pipe. He said that *there was a big difference* in pipe. The pipe which he used gave him three times the life of the best steel pipe. He said it was the cheapest pipe in the end.

"So now, I use Reading Genuine Wrought Iron Pipe. I know that its initial cost is slightly more, but its cost per year far less. I have come to know its far superior threading qualities and its ability to resist corrosion which eliminates those costly replacements. Through Reading's years and years of service I have realized it's the pipe that gives a hundred cents on every dollar's worth."

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paper, fine paper, news print, tissue paper, cover paper, board, etc. It is recommended that the basis weight or "substance" of a given sheet of paper be based on a ream 25x40 inches of 500 or 1,000 sheets for all paper.

Method: The weight of a given sample of paper is determined by means of a sheet-weighing device that indicates the equivalent weight in pound in terms of a 500-sheet ream. Graduations of $\frac{1}{4}$ pound are sufficient for most work, but it is recommended that a sufficiently large sample be used in order that a variation of $\frac{1}{4}$ pound scale reading will not be greater than $\frac{1}{2}$ per cent of the total weight. Where small samples only are available, it is recommended that a chemical balance be used, the conversion factor from grams to pounds being 1.102. For accurate work the relative humidity and temperature should be recorded or considered.

In connection with the determination of weight of a sample of paper, it is necessary to determine the total area in square inches of the sample being weighed. The area should be determined within an accuracy of $\frac{1}{2}$ per cent, except that the dimensions should not be determined closer than 5/100 of an inch. It is recommended that the test sample for weight shall consist of 10 sheets, each 10x10 inches in size.

The total accuracy of the weight and area determination (ream weight) should be within 1 per cent, except where only a small sample is available. In the latter cases, it should be indicated that the result is approximate. Test results should not be reported in less than $\frac{1}{2}$ -pound units.

Calibration: Each sheet-weighing device should be carefully calibrated at stated intervals with accurate weights, both with increasing and decreasing load. Attention must be given to the setting of the device to make sure that it is properly leveled and gives zero reading at zero load.

3. THICKNESS.—Definitions:

Thickness of a sample of paper is the thickness of a single sheet of the paper as indicated by a dial micrometer in thousandths of an inch.

Method: By means of a dial micrometer, not less than ten readings of the thickness of the sheets of the sample are obtained, and an average of these readings indicate the thickness of the sheet of paper. Readings should not be reported closer than one-half of a thousandth of an inch (0.0005).

It is recommended that the dial micrometer used for this purpose shall have (1) a spherical plunger foot with one-inch (± 0.1 inch) radius of curvature of not less than $\frac{1}{8}$ inch in diameter, (2) that the static pressure shall be within the range of two pounds six ounces to one pound ten ounces, (3) that one division on dial is to be read as 0.001 inch and to be at least $\frac{1}{8}$ inch wide, and (4) that the accuracy of dial readings of micrometer with leaf gages shall be within the following tolerance:

Intervals	Max. permissible error
0 to .01"	$\pm .0001$ "
.01 to .04"	$\pm .0002$ "
.04 to .12"	$\pm .0004$ "

Calibration: It is advisable to have all thickness testers calibrated before use. This may best be done by securing a set of standard leaf gages, which range from 0.001 to 0.015 inches. This range of leaf gages covers the ordinary range needed in testing most papers, and should be used periodically to see that the instrument for measuring thickness remains accurate.

4. BURSTING STRENGTH.—Definitions:

The bursting strength is the apparent pressure necessary to burst a hole in a sheet of paper when the pressure is exerted against a definite area and the sheet is held taut by a clamp. The pressure is applied hydrostatically through a flexible diaphragm and is indicated on a suitable gage.

Method: An average of not less than 10 tests on different parts of the test sample shall be obtained by means of the Mullen tester. The tests are to be made with the improved type, with the lever

clamp and the hand wheel shall be turned at a uniform rate of not less than 120 r.p.m.; a lesser rate is difficult to maintain uniform and a greater rate produces too high results. Unless otherwise specified, tests are to be made between water marks. The dial is to be read in units, and the average of not less than 10 tests may be reported to one decimal place.

The gage of the Mullen tester should be calibrated with a standard dead-weight tester at least once a month and if the gage on the dead-weight tester will not reproduce itself within $1\frac{1}{2}$ divisions it should be discarded and a new one obtained. At least once a month a new diaphragm should be used and the amount of glycerine examined to determine amount and cleanliness. In placing a new diaphragm in place care should be exercised that air bubbles are not found under the diaphragm. As soon as a test is complete the wheel should be fully reversed, even before the sample is removed. It is suggested that a supply of diaphragms be kept in distilled water, as rubber rapidly deteriorates.

5. MICROSCOPIC FIBER ANALYSIS.—There are at present four methods used for this purpose, and this subject is now being investigated and studied by the Paper Testing Committee of the Technical Association of the Pulp and Paper Industry. It is, therefore, believed desirable to wait for the report of that committee before making any recommendations.

6. HUMIDITY CONDITIONS FOR TESTING.—The extract from the report of the Paper Testing Committee of T. A. P. P. I. (given below) indicates the general effect of relative humidity upon some of the physical properties of paper. It is brought to your attention that T. A. P. P. I. has requested the Bureau of Standards to go fully into the subject and prepare a publication in regard to this. It is understood that these data will soon be available, in the form of curves, for consideration:

"III. Physical Testing. (Extract from report of the Paper Testing Committee of T. A. P. P. I., PAPER TRADE J., July 13, 1922, p. 47.)

"1. EFFECT OF RELATIVE HUMIDITY.—A superficial examination of the published data will indicate that the physical qualities of paper are affected to a considerable degree by changes of the moisture content of the test sample. Different kinds of paper, as well as different qualities, are affected to a different degree, but certain tendencies are obvious and the importance of the consideration of the condition of the test sample at the time of test should not be underestimated. The suggestions contained herein are not conclusive nor complete, but the conclusions have been determined after a careful study of existing data.

"(a) *Relative Humidity.*—The moisture content of the test sample is affected by changes in humidity, either absolute or relative. Absolute humidity is defined as the number of grains of moisture per cubic foot of air at the temperature in question. Relative humidity is defined as the percentage of moisture present, at any particular temperature, to the amount of moisture present if the air were saturated at that temperature. The available data seem to indicate that in most cases the variation of quality of paper bears a relation of relative humidity, rather than to absolute humidity.

"In most testing laboratories that attempt to control their atmospheric conditions a temperature of 70°F. and a relative humidity of 65% is maintained. These conditions have been adopted because of work done in the past in Germany and because of the increased cost to maintain a lower relative humidity during the warm weather, when the moisture must be taken out of the air by some method of refrigeration. It is not uncommon, however, in steam-heated rooms, during the winter, to obtain a relative humidity as low as 15 per cent.

"(b) *Moisture.*—The moisture content of paper increases with increase of relative humidity and in general seems to be independent of the finish, kind of paper, or the method test. A composite average with the moisture content, when plotted, as ordinate and with relative humidity as the abscissa produces a regular curve,



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slightly concave. At 15 per cent relative humidity the moisture content varies from 3 to 7 per cent for different kinds of paper, and at 85 per cent relative humidity the range is from 9 to 14 per cent, with 20 per cent as a possible saturation point at 100 per cent relative humidity. The accompanying curve indicates in a general way the tendencies of change of moisture content with relative humidity.

"(c) *Weight*.—In general, it may be said that the variation of weight due to changes of relative humidity is similar and proportional to the variation of moisture content of the paper. The variation in weight from 15 per cent relative humidity to 85 per cent relative humidity seems to be about 6 per cent.

"(d) *Bursting Strength*.—Data available at this time in regard to the effect of relative humidity upon the bursting strength seem to indicate that bursting strength increases with relative humidity up to about 35 per cent relative humidity and that from that point decreases equally rapidly with increasing relative humidity. This conclusion seems to be assured from the considerable amount of data available, but it is not believed that any conversion factor may yet be developed. The amount of variation is widely different for different papers and it seems to be evident that long-fibered papers are affected to a greater extent than short-fibered papers. In any case, this variation is quite evident and should be taken into consideration when careful and accurate tests are to be made.

"(e) *Tearing Strength*.—Very little data are available in regard to the relation between tearing strength and relative humidity, but such work as has been done indicates that this test is markedly affected by changes of relative humidity. Tearing strength increases to a considerable extent with increase of relative humidity, and the amount of this variation seems to be comparable with that in the case of the folding and tensile test.

"(f) *Folding Endurance*.—The effect of relative humidity upon this test seems to be somewhat erratic with different papers, but in any case the variation is very marked. In general, the folding endurance increases rapidly with increase of relative humidity, the machine direction more rapidly than the cross direction. With certain kinds of paper there seems to be a peak in the curve at 80 to 90 per cent relative humidity, with a rapid decline, while with other papers this peak does not appear. Data seem to indicate that this test is affected by relative humidity to a greater extent than any other.

"(g) *Breaking or Tensile Strength*.—The variation in this test seems to be very similar to that in the case of the bursting strength, but to a greater degree. Strength increases with relative humidity up to a point of about 35 per cent and then decreases at a similar rate. This variation is similar in both the machine and cross direction and in either case seems to be over twice as much as in the case of the bursting strength."

It is obvious that certain properties of paper are affected by relative humidity and it is believed necessary to control the conditions of test when accurate tests are desired. It is probable that a definite relation may be found between the moisture content of paper and its physical properties and it may be possible to determine a conversion factor to reduce the strength value, for instance, to some definite relative humidity.

In view of the work now being done at the Bureau of Standards, this committee does not recommend a particular relative humidity at which paper should be tested, but it does recommend that this subject be considered and that some rather narrow limits of relative humidity be adopted, taking into consideration the average indoor relative humidity and the cost of maintaining constant humidity conditions in the testing laboratory.

IV. Sampling of Paper For Test

1. *GENERAL*.—One very important aspect of the technical study of paper which has been neglected is a proper, intelligent and systematic method of procuring a portion of a lot of paper which may truly be considered to be a representative sample of that lot. Unless

this is done, the value of any test is somewhat vitiated by not knowing whether the sample represents the lot of paper in question. It is believed that proper sampling is important both in the mill in manufacture, in order to maintain uniform quality, and also at a point of delivery of shipment to determine the quality of the paper received.

In view of these facts, this committee believes that certain recommendations may be made and that, after revision, they should be included in that part of the Bureau of Standards' recommendations that have to do with the testing of paper.

2. *TEST SAMPLE*.—The test sample shall be considered to be representative of the lot of papers in question, shall consist of a sufficient number of sheets to have a total area not less than 1,000 square inches and shall be used for all the necessary tests on paper. If tissues or boards are in question, the size of the sample may be adjusted.

Tests will be so made that all the sheets of the test sample will be tested and an average will indicate the average quality of the lot of paper in question.

3. *SAMPLING OF ROLLS*.—Not less than 10 per cent of the number of rolls delivered should be sampled by removing a suitable size sheet from the first unharmed layer under the wrapper, provided that equal portions are taken from several rolls and that sufficient paper is taken to make up the test sample of not less than 1,000 square inches. If there are more than 100 rolls in the lot of paper in question, not less than 5 per cent of the number of rolls should be sampled as above.

The sheets or portion of sheets obtained in the above manner should be cut and trimmed to small sheets not greater in size than 10 x 10 inches and shall be considered to be the test sample.

4. *SAMPLING OF PAPER IN CASES, FRAMES AND BUNDLES*.—Not less than 10 per cent of the number of units of the above should be so sampled that separate sheets are taken from different portions of the case, frame or bundle of paper in order that those sheets will represent the paper of that unit. If there are more than 100 cases, frames or bundles in the lot of paper in question, not less than 5 per cent of the number of units should be sampled as above. The sheets or portions of sheets obtained in this manner should be cut and trimmed to small sheets not greater in size than 10 x 10 inches and shall be considered to be the test sample.

5. *RE-SAMPLING*.—In case of necessity for new samples, the sheets should be taken in the same manner as indicated above, except that different rolls, cases, frames or bundles should be sampled.

In case the identity of the original units is lost and the paper is not in cases, frames, bundles or rolls, the whole lot should be thoroughly sampled, so that the sample will be representative of the lot.

V. Tolerances

1. *GENERAL*.—Due to the method of manufacture of paper and the lack of uniformity of paper and the errors introduced during testing of paper, it is believed by this committee that a definite system of tolerances should be developed and applied to the test when obtained. These tolerances should cover the errors of sampling, of testing and the varying quality of paper. The experimental tolerances of testing will be given in connection with the standard methods of testing.

2. *WEIGHT*.—The tolerances permitted in the trade customs and practices of the various paper manufacturers' associations appear to be fair and reasonable, and it is recommended that these tolerances be applied in so far as tolerances of basic weight are concerned.

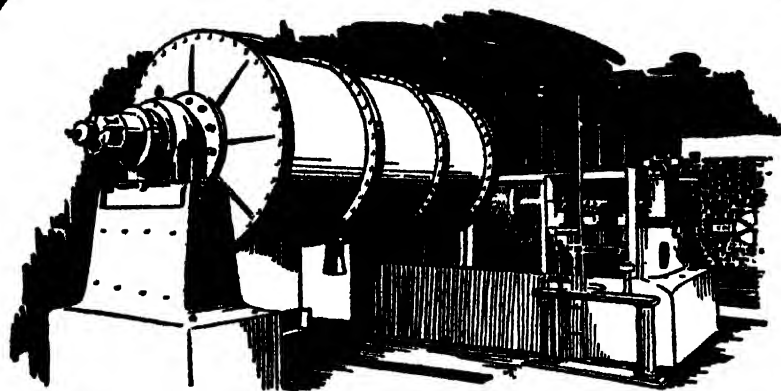
3. *THICKNESS*.—A tolerance of 10 per cent above or below the specification is recommended for the thickness of paper.

4. *BURSTING STRENGTH*.—A tolerance of 5 per cent below the specification is recommended for the bursting strength of paper.

5. *ASH CONTENT*.—A tolerance of 2 per cent total ash is recommended for the ash content.

6. *FIBER CONTENT*.—A tolerance of 5 per cent plus or minus is recommended for the fiber content.

THOROUGH BLENDING



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STANDARD

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DYESTUFFS

UNIFORM

CONTINUOUS CAUSTICIZATION FOR PULP MILLS WITH PROVISION FOR THE UNINTERRUPTED RECOVERY AND RE-USE OF THE LIME SLUDGE*

BY W. D. MOUNT, GIAMORGAN PIPE AND FOUNDRY COMPANY

While lime is being satisfactorily recovered and reused for causticizing purposes at the present time in connection with the old and widely used *batch* process there are, nevertheless, several factors that militate seriously against the attainment of the highest success. I shall endeavor to point out how well designed apparatus and continuous methods eliminate these obstacles to efficient plant operation.

Of several factors incident to the old method perhaps the most important is the variability of the free lime content in the discarded sludges. A free lime content much in excess of 5 per cent does not, as a rule, filter well, but if this limit is not exceeded, and if the recovered lime be continuously and uniformly used a granular and porous filter cake from one and one-half to two inches in thickness, which will wash and dry well, can be formed readily.

Another important factor is temperature. A cake such as that just described cannot be formed on the filter drum from cold sludges. It is essential that the muck be filtered hot, 60 to 80° C. and even higher temperatures favor the filtration, but at temperatures of 40 to 45° C the results are not good.

A third factor of importance is the use of hot water for washing the cake on the filter drum.

Lime Content Variation

Although I cannot speak authoritatively with respect to the practice generally followed by Soda Mills it has been my observation in those plants with which I am familiar that there is a marked variation in the free lime content of the sludges. I have in mind one instance where the free lime content ran as high as 19 per cent. In another mill the average over a considerable period was 13 per cent. You will understand that a sludge of this kind implies a waste of good lime if it is sent to the dump, or poor filtration will result if recovery is undertaken.

In justice to the intermittent methods of causticization it is only fair to state here that sludges of this kind can be attributed frequently to the operator rather than to the apparatus, although it is sometimes the case that both operator and apparatus are responsible, or carelessness and ignorance combined with faulty design. I have found too often in some mills a disinclination to depart from what has become accepted practice, and while I do not mention this in a spirit of criticism I have reason to believe that a greater willingness to try out certain variations in the process would bear fruit in the shape of substantial improvement in operation.

The Element of Temperature

It has also been my observation that the majority of intermittent causticizers are deficient in agitation and also in a satisfactory means of applying heat. I know of one mill where the records showed that on one shift it was quite the regular thing not to boil the batches. The temperature averaged about 190° to 194° F. This, of course, was directly the fault of the operator and not of the apparatus.

Proper boiling for a given period and effective agitation are absolutely essential to uniform causticization regardless of whether the intermittent or continuous process is employed. In either case

the design of the apparatus should be such as to make possible the attainment of these two important factors and that without difficulty. In this connection I may say that the advantage lies with the continuous process since efficient boiling cannot be obtained without, at the same time, securing proper agitation. As special provision is made for this combination in the continuous causticizer, it is a feature which eliminates at least one variable engendered by human control.

Heating Done Quickly

Another feature of the continuous causticizer which further tends to eliminate fluctuations is that the quantity of liquor under treatment at any time is, as compared with the intermittent, extremely small and, consequently, the heating is quickly done. This, as a feature of design, is of equal advantage to the agitation; as a matter of fact, the problem was to tie these two important factors together in a manner which would insure the uniform and equal effectiveness of both. It follows, therefore, that as a first step in the design of causticizing apparatus positive and uniform boiling and agitation must be provided.

The second step is the separation of the hydrate from the sludge and the third the efficient washing and drying of this sludge. By drying I mean that degree of dehydration possible on an approved filter.

The fourth and last step is the calcination of the sludge as it comes from the filters and its return as quicklime to the causticizing operation. These four steps are common to either of the two methods under discussion.

Required Apparatus

The special apparatus and plant required for the continuous process may be described as follows: Continuous causticizer, decanter, rotary filter, rotary kiln, continuous lime slaker, and certain auxiliary apparatus such as vacuum pumps, lime and liquor pumps and a sludge agitator. All of this equipment works continuously. The causticizer is heated with exhaust steam and is supplied continuously with calcium hydrate and sodium carbonate in the proper proportions by means of pumps. The uninterrupted discharge of caustic liquor and lime sludge is delivered by pumps to the decanters whence the clear hydrate is drawn from the top and the mud from the bottom. The last-named is pumped direct to the sludge agitator and from there it flows to the filter. The cake is then delivered by a belt conveyor to the rotary kiln which is fired with gas, powdered coal, or oil. The product of the rotary kiln is recovered lime ready to be sent immediately to the continuous slacker, and as a matter of fact is delivered at a uniform rate to the slacker.

To Investigate Dumping of Kraft Again.

[FROM OUR REGULAR CORRESPONDENT]

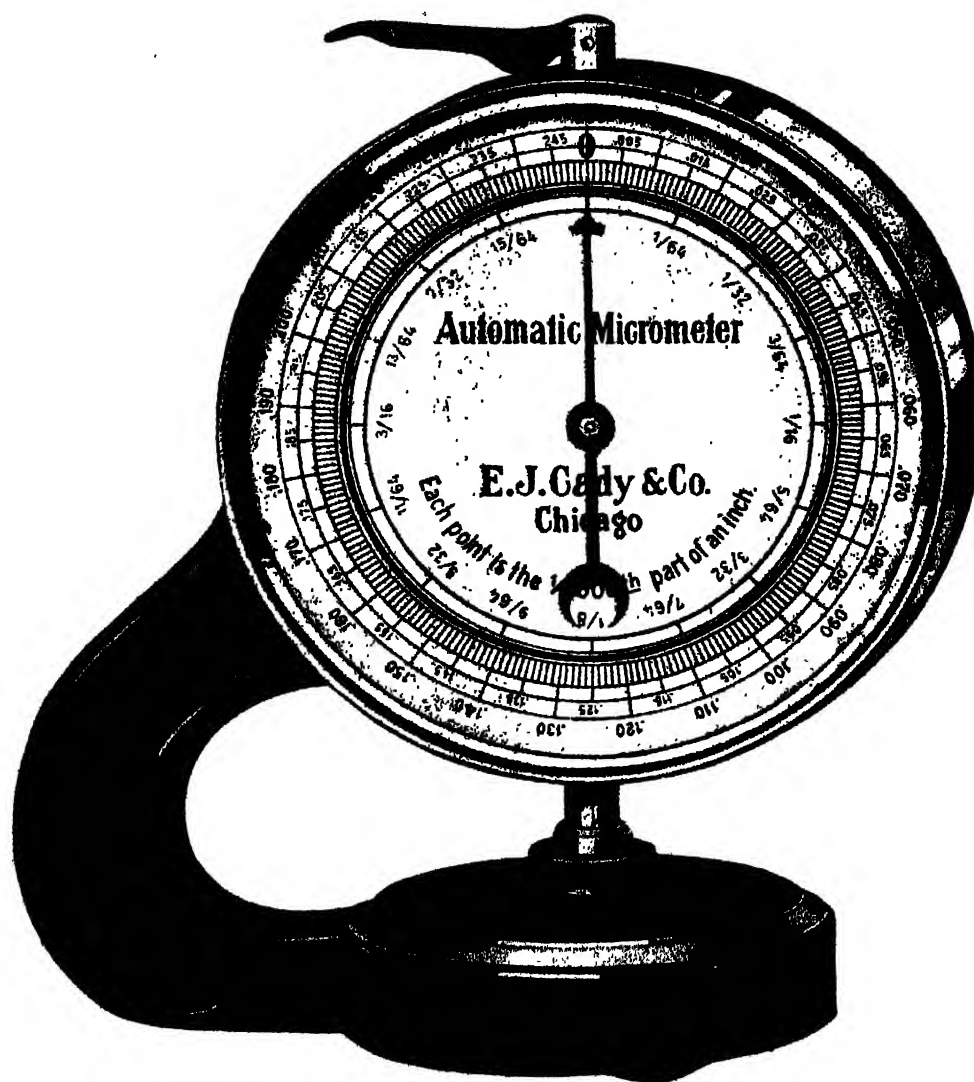
WASHINGTON, D. C., September 13, 1922.—Announcement was made by the Customs Service of the Treasury Department some weeks ago that no dumping of kraft paper had been found in a recent investigation from the Scandinavian countries.

Another complaint, however, has just been received by the Customs Service to the effect that there is dumping of kraft paper on the United States market from Norway, and another investigation has been started by the Customs Service.

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries Grand Central Palace, New York, September 11-16, 1922.

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REPORT ON PAPER TESTING BY GOVERNMENT

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 12, 1922.—E. O. Reed, chief of the Testing Section of the Government Printing Office, recently established by the Public Printer, for the testing of paper and other commodities, has just made a report of the work done from January 1 through July 1.

The Testing Section was established about January 21, although the actual testing of paper deliveries was not begun until February 1. The new receiving ticket and inspection of other materials purchased by the Government Printing Office was put into effect about April 1. Mr. Reed, in his report to the Public Printer, has the following to say, in part:

Has Greatly Improved Quality

"Over 1,500 samples of paper have been tested up to July 1, including all paper deliveries, envelopes and miscellaneous paper products.

"The result of the paper testing by this section has greatly improved the quality of some of the largest items on the Government Printing Office Schedule.

"Deliveries by the ——— Company, when the Testing Section first started operating, were found in many cases not to be equal to the specifications, and in no case was the white writing, stationery bond, or commercial ledger paper, animal sized, though definitely specified. The rag content of the deliveries on white writing and stationery bond was in many cases under the specified 50 per cent, being as low as 40 to 45 per cent. The writing quality was poor and the paper broke readily when folded. The erasure quality and writing quality of the commercial ledger paper, from the same mill, was very poor for this grade of paper. The general appearance of all this paper was very specky and not equal to requirements. It was found, upon examining several different deliveries of stationery bond letterheads to the Agriculture Department, and even the standard sample of white writing for 1921-1922, that the rag content of these papers was only 30 per cent and not animal sized.

"These defects were at once reported and all deliveries by this mill are now decidedly better—the rag content complying fully with specifications, all papers being animal sized and the general appearance and speckiness greatly improved.

"The amount of paper work handled by the Testing Section has been very large and it is doubtful if any other laboratory has ever handled a like number of samples in the same time with as few analysts. The methods used by this section in paper testing are the most accurate and reliable known and require more time than methods which are used by most of the other laboratories.

"The promptness with which the office has been able to secure technical tests of paper which the office was in very urgent need of has undoubtedly been of great value in preventing delays in the work of the office.

"Binders' boards have been carefully tested, and it is believed that the quality of this material is now satisfactory and equal to standard samples, and that bidders have a better understanding as to the requirements of this office. It is hoped to carry out considerable investigational work on binders' board and secure definite specifications indicating the necessary qualities desired."

Recommendations for Paper Work

In connection with recommendations for the paper work, Mr. Reed says in his report:

"The Testing Section is fully equipped for paper work with the exception of special physical testing devices, which may be needed in the future. A room has been constructed for maintaining an average uniform humidity condition throughout the year and the necessary equipment received and is waiting erection by the Buildings Division."

In conclusion, and taking up the question of a better understanding with contractors, Mr. Reed says:

Need for Better Understanding

"The Testing Section should aid in establishing a more cordial feeling and understanding between the contractor and the Government. Any contractors supplying materials to this office should be invited personally, if possible, to bring to our attention any grievance which they may feel they have with reference to the testing of their deliveries and urged to demonstrate their views or be thoroughly convinced that they have no grounds for complaint.

"It is certain that the present methods of sampling and testing are as fair as possible to both the Government and contractor. The fairness of the specifications for paper cannot be doubted, as these specifications have been in use for years and are in general accord with trade customs."

Wants Forest Station for New England

[FROM OUR REGULAR CORRESPONDENT]

NEW YORK, September 12, 1922.—The Woodlands Section of the American Paper and Pulp Association, the department devoted to the practice of forestry, has asked governmental authorities to secure the establishment of a forest experiment station in New Hampshire to study problems relating to the growing of pulpwood for the paper industry, as well as timber for building construction.

The New England station, it is believed, would be able, through investigations by forest service experts, to develop information of the greatest value to the paper companies which are endeavoring to practice forestry on their cut-over lands, as well as to protect the timber now standing from devastation. The Woodlands Section believes New Hampshire would be the best field, because its forest lands are typical of the pulpwood forests of Maine, New York, New Hampshire and Vermont, the four states which a New England laboratory would serve, and because there is already a national forest in the White Mountains.

In taking this action, the Woodlands Section, which is composed of foresters and technical logging men of the paper companies, urges that the government give the aid of its technical research men to the study of problems in which the company foresters, managing private forests on a commercial scale are interested, and to co-ordinate the investigations of these private foresters.

Rumford Bag & Paper Mills Have Outing

RUMFORD FALLS, Me., September 9, 1922.—The employees of the Continental Paper and Bag Mills held their annual outing and field day last Saturday and it was one of the most successful occasions of the kind ever held. In its account of the affair the *Rumford Falls Times* says:

"And the man who was responsible for all this: Page Major Theodore Hawley, the genial general manager. Whether it be business or a holiday such as this, the Major plans it with the same thoroughness and success that is characteristic of him and in this achievement he may well take pride."

To Intervene in Paper Mills Tariff Case

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 13, 1922.—The Interstate Commerce Commission has announced that the Kalamazoo Chamber of Commerce has been permitted to intervene in case No. 13,950 of the Michigan Paper Mills Traffic Association against the New York Central et al.

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Editorial

Vol. LXXV New York, September 14, 1922 No. 11
FIFTY-FIRST YEAR

The Chemical Exposition

Never, in the history of chemical development in the United States, has a more elaborate or up-to-the-minute display of the wonders of modern science and the magic of twentieth century chemistry been presented than is the mammoth exhibition of four hundred manufacturers, covering four floors of the Grand Central Palace and lasting from September 11 to 16. In recent years the exhibitions of the National Exposition of Chemical Industries have ceased merely to be milestones, recording the progress of the preceding twelvemonth. They have become a source of veritable wonder and fascination for the age in which we live—they have served as a medium through which the world in general and kindred manufacturers as well as consumers, in particular, may be apprised of the most recent achievements in the world of chemistry.

This week's exposition reflects at every turn the growing tendency to eliminate the human equation in modern mechanical devices and substitute a more efficient and inexhaustible element—the machine. In nearly every exhibit some feature was stressed which was designed to substitute oiled steel bearings for brute man-power. Economizers of all types were the order-of-the-day—economizers particularly, that effected their greatest saving in human energy.

No pains were spared by the exhibitors in the construction of actual working models, and visitors of the exposition were thus afforded an opportunity of witnessing some 400 different manufacturing plants—in miniature or in illustration—all under one roof. Those interested in the technical end of paper making were enabled to obtain a working knowledge of every new feature which chemists have evolved during the past year—to inspect the various model plants and miniature devices used in illustrating novel processes—all within the brief space of one afternoon.

Another single afternoon was all that was required to furnish each with a graphic conception of these late improvements, both in word and motion-picture form. The meeting of the Technical Association of the Pulp and Paper Industry, presided over by Mr. George Williamson, president of the Association, was perhaps the most thoroughgoing and best-attended ever held. A spirit of camaraderie and hearty co-operation pervaded the meeting of these men that are today molding the future of paper manufacturing—men who are seeking to improve methods of production, eliminate waste and save man-power. In the round-table discussions of various subjects, the keenest enthusiasm was exhibited over each matter as it was taken up, the long discussions, pro and con, and the multitude of questions from paper and pulp technical experts the country over giving evidence to this.

The 1922 Chemical Exposition served to mirror the constructive strides which are being made in all branches of American industry. The plans discussed were created in the mind of some individual who has probably devoted his life to an exhaustive study of his subject. The new inventions—the working models—the labor and time savers—all were worked out in the minds of men whose train-

ing and thought and study has enabled them to see into the future and anticipate the needs of industry a generation from now. Their work is creative work. Their enthusiasm is based, not upon the lure of the dollars, but upon the fact that they have really accomplished something. Their idea—their "castle-in-the-air" of a few short months or years ago—has materialized into a mechanism of cold steel. They have made a genuine contribution to industry and to progress.

An Improved Outlook

From all indications paper men are in for a satisfying period of healthy business during the last quarter of this year. With the advent of the fall months, demand is sharply on the increase in practically every branch of the paper field and prices are rising correspondingly.

The International Paper Company, representative of the trend of the American paper industry because it is the largest individual company, is now producing, on a capacity basis, 1,100 tons of news print daily and other grades, bringing the total up to 1,600 tons. Current news print consumption, by the way, is now going on at the highest annual rate ever known—more than 2,200,000 tons.

"International Paper Appears to Have Turned the Corner," says a headline in one of last week's issues of the *Journal of Commerce*. The article continues:

"International Paper entered the second half of 1922 with its labor troubles settled, in fair financial position and with increased paper prices in prospect. Two advances of \$5 a ton each have already been effected and new contracts are being taken at \$80 a ton. Prices for 1923 will begin to come out about November and it is practically certain that they will be at least \$80 a ton, possibly higher.

"More than 50 per cent of company's news print production was contracted for to end of 1922 at \$70 where margin of profit is small even on large production. International Paper did well to break even on operations during the first half year to say nothing of bond interest or preferred dividends, which combined required about \$1,200,000 for six months. With news print production at capacity and prices stiffening, it is practically certain that this half year will show distinct improvement and preferred dividend may be earned."

Commenting upon the company's assets, the article continues:

"Plant and property account is carried at \$38,000,000. This does not nearly represent its real value as included in this are woodlands and water power rights which could not be purchased at any price. Few perhaps appreciate that International Paper Company owns in perpetuity developed and undeveloped water power sites on a scale which compares favorably with some of our largest public utility companies.

"To insure its wood supply, it has acquired a small empire of its own in timberlands. Its mills each year consume about 700,000 cords, available from 220 square miles of timberland. Part of this supply is purchased from outside sources."

If, after a year and a half of adverse conditions, the country's largest paper company is beginning to pull out of the mire and again realize a profit, this must, of itself, bode the approach of better times for the whole industry. Surely the paper outlook has improved.

University Co-operation

"The Paper Industry and the Business Cycle" is the subject to which Weekly Letter No. 37 of *Harvard Economic Service*, the publication of the Harvard University Committee on Economic Research, is devoted. Accompanying the pamphlet are nearly a dozen interesting charts showing monthly price variations for the representative grades of paper and board from January, 1919, until the present.

Those paper men who were fortunate enough to be able to get to the convention of the American Paper and Pulp Association last April will recall the illuminating address delivered by Mr. Warren M. Persons, Professor of Economics at Harvard. Using a series of graphs, Mr. Persons outlined his reasons for believing that there would be an increase in business activity and volume of manufacturing in the near future, accompanied by rising prices. "It is probable," he stated at the general session of the convention, "on the evidence of price records, that during the next year or two the prices on a number of important basic commodities will show an increase of 25 to 50, or even 100 per cent above the low points of 1921."

Mr. Persons' predictions have come true so far. His conclusions were based on a thorough-going and intelligent study of statistics. Jobbers, who are now experiencing considerable difficulty in securing adequate supplies to cover the requirements of consumers, will recall that it was Mr. Persons' advice, when questioned directly, that they stock up to capacity at that time—when prices were at their lowest ebb for the year.

Now, when Harvard's Committee on Economic Research publishes a "Letter" dedicated solely to the interests of the paper industry—to the dissemination of unbiased facts—paper men will receive it with more confidence. They have seen Harvard statistics and "theories" work out in actual practice once. Perhaps it will happen again.

In any event, there is nothing to be lost by a careful perusal of Weekly Letter No. 37. W. L. Crum, of the Committee on Economic Research, has spared no efforts in the gathering of information for this publication and the entire committee deserves the highest praise for the clarity of its content. The *PAPER TRADE JOURNAL* takes this opportunity to express its appreciation, in behalf of the paper industry for Harvard's constructive work in this field.

Japanese Visitors at Watertown

[FROM OUR REGULAR CORRESPONDENT]

WATERTOWN, N. Y., September 11, 1922.—T. Okawa, son of H. Okawa, who is the second wealthiest man in the Japanese Empire arrived in the city Friday night with Clarence E. Kinne, of the Bagley & Sewell Company and will be his guest until Tuesday. With him is K. Satow, private secretary to the senior Okawa. They are on a business trip through the United States and to Europe, inspecting paper mills and paper machine manufacturing plants with a view to possibly placing orders for machinery.

This is the first visit here of the young man, although Mr. Satow has been here several times before. He is a graduate of the University of Tokio in a mechanical engineering course, while Mr. Satow graduated from the University of California and took a post graduate degree from Columbia.

H. Okawa is in control of 45 large corporations in Japan and owns a large group of paper companies. He has 16 paper mills

operating 50 paper machines, many of which were made in the Bagley & Sewell plant here. Mr. Kinne had visited the mills while in Japan a few years ago, and it is claimed that through the local concern Watertown is the best known city in the manufacturing centers of the Empire. Paper companies represented by the two visitors include the Fuji Paper Company, Kaushusu Paper Company, Chuwo Paper Company and the Karafuto Industrial Corporation. Practically all kinds of paper are manufactured, with news print being the least of them. They report an over-production of paper there just now, although most of the mills are operating on full time.

The Japanese visitors were met by Mr. Kinne in Vancouver, and they accompanied him across the continent. He left for the West on June 29 on a visit to mills throughout the coast section. He stopped in Portland, Ore.; Seattle, Yakima, in Eastern Washington, in the midst of an irrigated fruit country, and then went to Vancouver, where he passed two weeks visiting mills in that country.

It is not known what plans for placing orders for paper making machinery the visitors to the Bagley & Sewell plant may have made.

State May Take Pulpwood for Fuel Purposes

[FROM OUR REGULAR CORRESPONDENT.]

ALBANY, N. Y., September 11, 1922.—Drastic measures to insure fuel for homes during the coming winter which were under consideration by Governor Miller and the legislature sitting in extraordinary session in Albany may carry the new state fuel administration so far as to seize all available supplies of cut pulp wood within the state and ship it to centers of population needing fuel instead of using it for the manufacture of paper.

The big question facing the governor, the legislature and the state fuel administration will be to get fuel. All other questions will be of secondary importance. This will mean that where coal is not available, the administration will take steps to get wood, and cut wood, even though intended for pulp mills in the Glens Falls district, may be seized, simply because it is in available form for burning in an emergency.

Realization that the supplies of coal are far inadequate to meet the situation even in the fall has brought up the question of wood fuel supply, but the present supply of wood for fuel purposes in centers of population is even more inadequate to meet the situation of winter fuel than the coal.

This, of course, will mean that all wood that is cut and can be burned will be made use of for the relieving of the emergency situation. The Glens Falls district probably more than any other in the state with the exception of the territory near Watertown, will feel the industrial pinch if it becomes necessary to seize pulp wood for fuel.

This step, however, would only be taken in an extreme emergency when it would be necessary to alleviate actual suffering caused by the lack of fuel.

Paper Standardization Committee to Meet

[FROM OUR REGULAR CORRESPONDENT.]

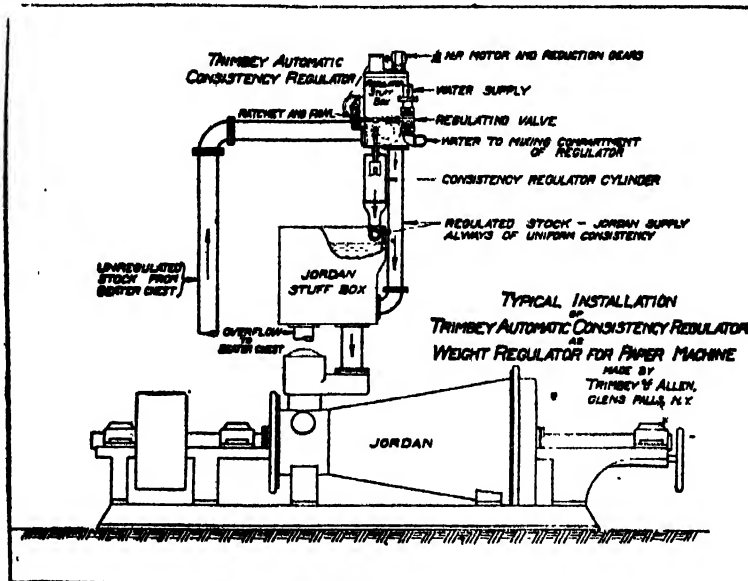
WASHINGTON, D. C., September 13, 1922.—A meeting will be held in Washington on September 25 of the Advisory Committee of the Paper Section of the Bureau of Standards. As is well known to the trade, this advisory committee was appointed by the American Paper and Pulp Association and its purpose is to confer with officials of the Bureau of Standards in connection with standardization work.

Leo Shlick Occupying Larger Quarters

[FROM OUR REGULAR CORRESPONDENT.]

Boston, Mass., September 11, 1922.—Owing to constantly increasing business, Leo Shlick, M. E., consulting and designing engineer and mill architect, has purchased and is now occupying new quarters at 314 Beacon street, where his main offices are located.

UNIFORM STOCK



This is the machine that will regulate your paper stock to a uniform consistency, thus insuring **UNIFORM BRUSHING ACTION** at the Jordan. Given stock of uniform character and consistency going on to the wire you will get **UNIFORM WEIGHTS** and **UNIFORM RUNNING CONDITIONS**.

This regulator will also cause to be delivered at Beaters, Mixers or Bleachers, stock of a set, uniform consistency.

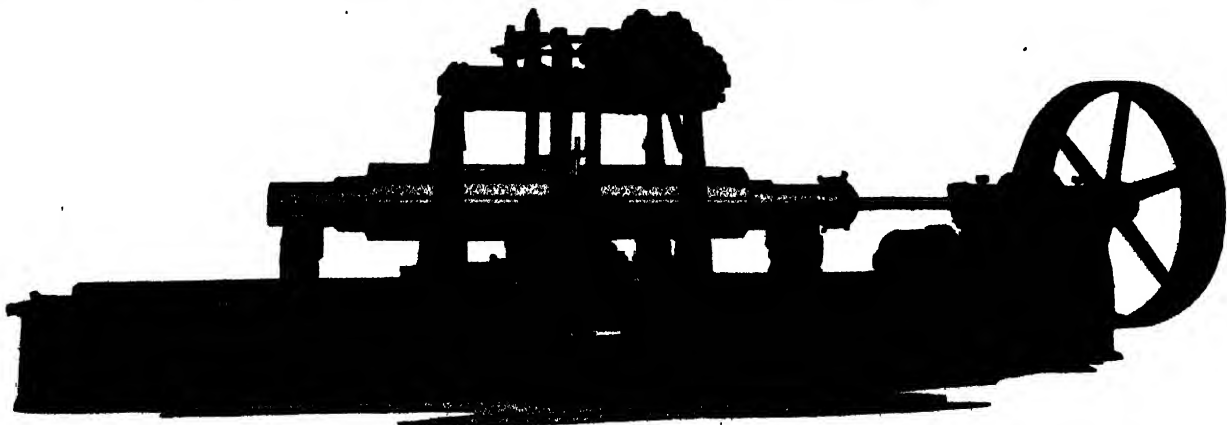
See our exhibit. Booth 515, 8th Exposition of Chemical Industries, Grand Central Palace, Sept. 11-16.

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Section of the Technical Association of the Pulp and Paper Industry



AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by W.G. MacNAUGHTON, Secretary

FALL MEETING OF THE TECHNICAL ASSOCIATION

The fall meeting of the Technical Association of the Pulp and Paper Industry will be held on Monday and Tuesday, October 9 and 10, at the Hotel Wolverine, Detroit, Mich.

Business Session

On Monday morning, beginning at nine-thirty, a business session will be held at which progress reports of the standing committees will be received and other business transacted.

Waste in the Industry

The afternoon of Monday will be devoted to a general session on waste in the industry. Robert B. Wolf, who is in charge of this, has a very strong committee working with him and it is expected that material progress will be made.

Besides a discussion of the general procedure to be followed, the two special phases that were selected for first consideration will be dealt with. These are fiber loss in mill effluent and barking drum refuse.

Committee on Waste in the Industry

As will be noted from the personnel of the committee, the industry is extremely well represented in all its branches as well as engineers and government bodies, particularly the Forest Products Laboratory, Madison, Wis.

R. B. Wolf, *chairman*, 42 Broadway, New York, N. Y.; G. D. Hearce, *vice-chairman*, News Print Service Bureau, 342 Madison avenue, New York, N. Y.; W. G. MacNaughton, *secretary*, Technical Association, 18 East 41st street, New York, N. Y.; O. L. Berger, G. D. Jensen Company, 200 Fifth avenue, New York, N. Y.; H. P. Carruth, Mead Pulp & Paper Company, Chillicothe, O.; P. K. Fletcher, Fletcher Paper Company, Alpena, Mich.; H. H. Hanson, Eastern Manufacturing Company, Bangor, Me.; F. R. Hyatt, International Paper Company, Glens Falls, N. Y.; H. O. Keay, Laurentide Company, Ltd., Grand Mere, Que.; Ernst Mahler, Kimberly-Clark Company, Neenah, Wis.; F. J. Morrison, Newton Falls Paper Company, Newton Falls, N. Y.; H. F. Obermanns, Hamermill Paper Company, Erie, Pa.; J. E. Plumstead, Jessup & Moore Paper Company, Wilmington, Del.; R. B. Robertson, Champion Fiber Company, Canton, N. C.; J. D. Rue, Forest Products Laboratory, Madison, Wis.; H. S. Taylor, Management Engineering & Development Company, Dayton, O.

Barking Drum Refuse

During the past month tests have been conducted on the performance of the best known types of bark presses. These tests were run under the co-operation of the Waste Committee, Forest Products Laboratory, the plant engineers, and the bark press designers. A report of the test will be presented at this meeting and

arrangements will also be made to continue the study with evaporative efficiency tests to show the value of the pressed bark as fuel.

Sectional Meetings

On Tuesday morning there will be two sectional meetings, one on paper testing under the chairmanship of Frederick A. Curtis, and the other on drying under the charge of Frederick C. Clark.

Drying

This subject has been carried on by the Service to Members Committee under the direction of Frederick C. Clark. A report of progress will be presented and further plans decided upon.

It is planned to present a "drying code" similar in general to the boiler code for conducting tests of boiler plant efficiency. This will be discussed and, if possible, adopted. Records of various co-operating plants will also be given.

Plant Visits

Tuesday afternoon will be left free for members to make plant visits to mills in the vicinity of Detroit or to automobile factories or elsewhere in the section. It is expected that invitations will be received from Detroit Sulphite Pulp and Paper Company and the Port Huron Sulphite and Paper Company for members to visit these plants.

Fall Meeting of T. A. P. P. I.

TIME: October 9 and 10, 1922

PLACE: Hotel Wolverine, Detroit, Mich.

Program

Monday, October 9.

- 9:30 A. M. Business Session—George E. Williamson, chairman.
Amendments to the Constitution.
Reports of Committees.
Vocational Education.—R. S. Hatch.
- 2:00 P. M. Waste in the Industry—R. B. Wolf, chairman;
George D. Bearce, vice-chairman.

Procedure:

- Fiber Loss Through Mill Effluent.
Barking Drum Refuse:
Report of bark pressing tests.
Evaporative efficiency of bark.

7:00 P. M. Dinner.

Tuesday, October 10.

- 9:30 A. M. Sectional Meeting on Paper Testing.—F. A. Curtis, chairman. Sectional Meeting on Drying Paper.—F. C. Clark, chairman.

Although arrangements have been made for the fall meeting and its sessions it will be necessary for members who attend to make their own reservations for hotel accommodation while in Detroit.

CONTINUOUS DRUM FILTERS IN PULP AND PAPER MILLS*

By H. A. MORRISON, OLIVER CONTINUOUS FILTER COMPANY, NEW YORK

Peculiar as it may seem, operators and executives in any given industry ordinarily confine their investigations to their own industry when seeking improved methods. Most mining engineers have no knowledge of the leather industry, chemical manufacturers never invade a ship-yard, nor are paper makers acquainted with the details of sewage disposal or the technology of beet sugar manufacture. However, it is the writer's firm conviction that the consulting engineer will attain greatest efficiency through careful study of every kind and type of technical activity. This may be considered a backward step since it draws away from the modern Mecca: specialization. Still, does not specialization lead to provincialism if not applied broadly?

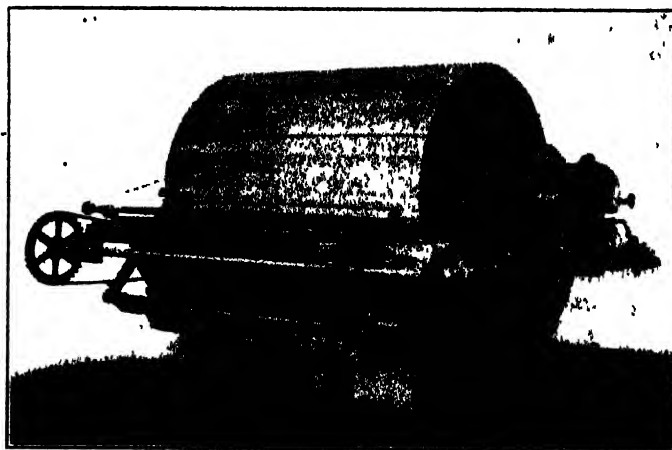
Equipment manufacturers, through their engineers, can frequently benefit industries by adapting to one trade an article that has been developed for another field. For instance: they may transfer a screen, a thickener or a filter, developed for a starch house or a sugar refinery, to a pulp mill. Such interchange of ideas and methods is beneficial to all and, in the fullest sense, constitutes genuine progress.

Continuous drum filters have been in general use in metallurgical, chemical and sugar works during the past ten years, but were only introduced into pulp mills within the last three years. This tardy application of a perfectly obvious improvement may denote either lack of enterprise on the part of the filter manufacturers, or a policy of inertia in the paper industry, or both.

The following uses of drum filters in pulp mills are fairly well developed at this time, and in them continuous vacuum filters of drum type have proven their worth. It is beyond the scope of this article to cover each application in detail, but enough may be said

filters are now used for this purpose, and the method has been extended, with but slight modifications, to wash sulphate lime mud.

Discussion of continuous filtration of lime mud in detail is out of place here. The subject has already been covered in an article entitled, "Continuous Filtration of Lime Mud in Manufacture of Caustic Soda," which appeared in "The Paper Industry" for February, 1921. However, the outstanding advantages of the continuous drum filter over the older method of settling and decanting



STEEL DRUM FILTER, WITH REPULPER, MONEL CLOTH COVER



6 X 6 STEEL DRUM FILTER WITH REPULPER, MONEL COVER

to obviate confusion of ideas. In chronological order the applications are:

1. Caustic Recovery.
2. Brown Stock Washing.
3. Thickening Before Bleaching.
4. Deckers and Save Alls.

The first use of continuous drum filters in pulp mills was for recovery of caustic from lime mud in soda mills. Large numbers of

are worthy of mention. The filter performs an exact and non-variable duty, delivering cake with uniform moisture content, at a regular rate. A relatively small amount of wash water effects a definite displacement of caustic so that losses of the latter are reduced. In contrast to this, decanting is always subject to variation, as no two charges will have identical settling rates. Washing in tanks is mainly by dilution rather than by displacement as on a continuous drum filter. The waste sludge, leaving the settlers, is in liquid form and cannot be either stored as a solid or economically returned. Even when excessive amounts of wash water are used with decantation, average caustic losses are more than double the loss when filters are employed. High losses—up to 2 per cent caustic in the waste sludge—are common in decantation plants. Cake leaving filters averages under 40 per cent moisture and under 0.3 per cent caustic, basis dry weight of cake, in dozens of mills where filters are used. Floor space economy, labor and caustic savings, and reduced evaporator load, all result from the use of filters in place of settlers.

Many kraft mills use leaching vats and wash their lime mud by percolation. Filters are now generally used, and give the utmost satisfaction. Two small continuous drum filters, size 5' 3" diameter by 8' 0" face, take the place of fifteen leaching vats, each 4' deep by 10' wide by 20' long. Modifications of the cook liquor (for example, the use of sulphur in a soda liquor) will decrease the filter output, as compared to the straight soda process; but in all cases the unit capacity of continuous drum filters is satisfactorily high.

Monel metal cloth, of fine mesh, is ordinarily employed as a filter medium for caustic liquors as it is resistant to corrosive action. Monel metal cloth of 300 mesh is obtainable in various weaves, and we have records of such cloth in continuous service for over three years. Nickel cloth of 500 mesh may also be obtained.

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922

Brown Stock Washing

Washing of digested soda pulp on continuous drum filters was developed because the pan washing system, commonly used, followed the same general course as the "leaching by gravity in deep tanks" method of early metallurgists. Ore leached by this process was often badly washed, the time factor was variable, and removal of the washed ore from the leaching tanks was expensive. Continuous filters have almost entirely replaced leaching tanks in certain branches of metallurgy, and there is ample reason to believe that wash pans will meet the same fate in competition with filters.

The essential advantage in washing pulp on a filter is that the weak liquor and hot water washes are applied evenly to each particle of the comparatively thin cake of pulp. High vacuum removes the liquor from the cake continuously, and there is no diffusion or mixing of liquor and wash water in the thin cake. Contrast this action with that in wash pans, wherein washing is done by dilution rather than by displacement, and in tanks up to 15' deep there is, of necessity, constant mixing of water and liquor, due to long period of contrast (because of great depth of charge) and to variations in porosity in different parts of the batch.

Evaporator feed liquor from a continuous drum filter need not be diluted more than 1° Bé. by the washing operation. Contrast this with pan washing dilution, which, in the best soda mills, approximates 4° to 5° Bé.

On kraft and other varieties of sulphate pulp, the diffusion battery is in general use for recovery of cook liquor. Diffusers conserve heat units and reduce liquor dilution, but do poor washing and show high soda losses. Continuous drum filters show numerous advantages over diffusers for washing sulphate, but the chief economy is in decreased soda losses. Average kraft mills lose 125 lb. soda (as Na_2SO_4) in washing a ton of pulp, bone dry basis, while a drum filter readily reduces this loss to only 35 lb. The non use of diffusers on soda stock is self-evident admission that they do poor washing.

Brown stock washing on continuous drum filters is discussed in "The Paper Industry" for January, 1922, under the title of "Continuous Automatic Washing of Wood Pulp," and those interested are referred to that article.

Thickening Before Bleaching

Manufacturers of bleached stock are now taking an active interest in bleaching at high density. It is known that when pulp is sent to the bleachers at around 30 per cent air dry, shrinkage under bleach action is reduced 25 per cent. Economies in bleach and in coal, together with complete elimination of organic dirt from rotten wood, etc., give a net advantage of fully \$4.00 per ton of pulp in favor of high density bleaching. (See "Wolf Bleacher in Successful Operation at Newton Falls" in "United States Paper Maker" of April 15, 1922, and "Advantages of Bleaching Pulp at High Density," by Robert W. Wolf, in *PAPER TRADE JOURNAL* of June 1, 1922.)

Drum filters will uniformly deliver pulp at proper density to the bleachers. The filters require only the most casual attention and consume but little power. Metal cloth is the best filter medium, and upkeep and repairs are nominal. Labor and felt costs are incomparably lower than when using wet machines.

Highest capacities are obtained when stock is filtered at about 1 per cent density, but satisfactory results are secured on 0.5 per cent stock. In all cases the filtrate is remarkably free of fiber. A continuous drum filter for thickening 30 tons fiber (bone dry basis) in 24 hours will require about 25 H. P. for driving filter, dry vacuum pump and solution pumps.

Deckers and Save-Alls

Any good save-all recovers enough fiber from paper machine white water to more than offset its installation and operating

costs, but a save-all that recovers no more than 50 per cent of the total pulp in the white water should be called a "half save-all." Well operated news print mills are nearly all fully equipped with up-to-date save-alls, yet their regular daily stock losses exceed 3 per cent of output.

Certain mills have cut their save-alls out of the system, and are using inclined screens instead. The latter make an almost equivalent recovery and require no attendance or power.

Let us assume that a mill makes 250 tons news print daily and loses 3 per cent, or 7.5 tons, in its white water. The mill makes 200 tons ground wood and 50 tons sulphite, and the only losses are from the inside end of the wet end of the paper machines.

Aside from the slight cost of finishing into paper, the pulp lost has the same value per unit as that realized for paper at the mill. With news print at \$75.00 per ton, let us assume the lost pulp to be worth \$50.00 per ton, then the daily loss is 7.5 times 50 or \$375.00.

In point of fact, the lost pulp is more valuable per ton than any other portion of the output since it is the most finely divided and, if retained, would render the stock less free, "fill" the sheet, and by aiding the felting action, increase both opacity and strength. Therefore, the machine speed could be increased at least 5 per cent and less "broke" would be returned to the beaters. Present practice necessitates grinding to produce excess wood flour to offset that now lost in white water and leave sufficient amount to insure good handling on the paper machine. With filters none of the wood flour is lost, so that no excess is required and power for grinding is accordingly reduced.

Value of Drum Filters

The foregoing is not news to pulp and paper men, but what can be done to correct the trouble? The continuous drum filter answers the question, as it will (1) make a complete recovery of all solids in white water, (2) operate automatically, (3) require slight outlay for repairs and operation, and (4) cost little to install.

Based upon a mill producing 250 tons of news print per day, and considering all installation, maintenance and operating expense, there is a net profit approximating \$100,000.00 per year due to using continuous drum filters for deckers and save-alls.

In addition to the four uses mentioned, there are several other places in pulp and paper mills where continuous drum filters can apparently be employed to reduce production costs. Co-operation between the equipment manufacturers and pulp and paper makers will insure proper development of these additional applications.

The use of continuous drum filters in the paper industry means less waste, higher efficiency, and greater production per man employed.

To Begin Work on Paper Mill of Meade Fibre Co.

BRISTOL, Tenn., September 11, 1922.—Work is expected to begin in the next few days on the new \$1,000,000 paper plant of the Meade Fibre Company, at Kingsport, Tenn., according to an announcement made by J. H. Thickens, general manager of the concern, one of the largest of its kind in the South. The new plant will be controlled by the fiber company and will have three large factory buildings constructed of brick, steel and concrete.

High-grade paper for books and magazines will be manufactured at the new plant which will give employment to about 350 persons. It is expected that the building will be ready for occupancy within six months. The new structures will be located a short distance from the units of the Meade Fibre Company.

By defeating the A. G. Nelson Paper Company baseball team, to the tune of 3-1, the Lasher & Lathrop mine had the aggregation for first place honors in the New York City Merchants' Baseball League.

THE APPLICATION OF RECORDING INSTRUMENTS IN THE PULP AND PAPER INDUSTRY*

By L. G. BEAN, THE BRISTOL COMPANY, WATERBURY, CONN.

Recording instruments have been in commercial use on varied manufacturing processes for some thirty years, but not until comparatively recent times have their full advantages and great helpfulness in the manufacture of pulp and paper been appreciated. The increased use of chemical control and modern methods have eliminated many hit-and-miss practices and substituted in their place methods based on definite knowledge of the qualities and conditions entering into any operation. The object of the recording instrument is to place this knowledge in its most desirable form before all parties concerned. The fact that any variable quantities may be registered in graphic form gives to this type of instrument the following two distinct advantages over any ordinary indicating instrument:

1. They furnish the operator of any process with an accurate guide as to at just what rate and to what extent any change in the process is taking place
2. They furnish a reliable record of the varying conditions which enter into the process and serve as a check in the hands of the management to see that the best operating conditions are maintained.

Applicable to all Processes

Recording instruments are applicable to practically all processes for the measurement and recording of pressure, temperature, humidity, speed, liquid level, motion, flow, time and electricity. To mention all of the uses to which these instruments are being put at present in the pulp and paper mills would be impossible, but the following will give some of the more common applications to which they are adapted in the different types of pulp and paper plants. The fact that one large pulp company has nearly a thousand of these recorders in actual operation shows their universal application.

Use in Ground Wood Pulp Mills

In ground wood mills the character of the pulp produced depends largely upon the speed of the stones and the pressure of the wood against the stones. The careful observation of the two components, speed and pressure, as given by a recording tachometer and recording pressure gauge, will insure a most even quality of pulp. One eastern mill has 36 of its grinders equipped in this manner, which is especially to be recommended when water power is used. If the grinders are motor driven, then recording wattmeters are to be recommended in place of tachometers and the grinder men instructed to operate their machines between a given limit on both the pressure and wattmeter charts. Recording thermometers should then be installed with the sensitive bulbs immersed in the ground wood from each stone. If the pulp is ground too cold, small bundles of fibers result instead of single fibers and consequently poor felting qualities; if the pulp is ground too hot, then a worthless flour pulp results as well as excessive wear on the stones. 140° is a good average for this work and a recorder with a range of 20° to 180° is to be generally recommended. The bleaching instruments will be considered separately.

Sulphite Process

In the sulphite process recording instruments find a most varied application. Undoubtedly, the most important use here is in connection with the digesters. Each digester of any modern plant should be equipped with a recording pressure gauge and recording

thermometer. The thermometers generally utilize a chart with a range of approximately 140 to 330° F. Charts calibrated in degrees Centigrade, with about the corresponding range have been used to considerable extent by many of the western plants. The thermometer used here should be either of the so-termed "vapor tension type" or "gas filled type." Mercury filled instruments are not well adapted to this use as they are frequently affected by temperature changes along the tubing connecting the sensitive bulb to the instrument. The sensitive bulb used with these instruments is generally constructed of copper and protected by a heavy cast bronze protection well which is entered through the wall of the digester and held tight by means of a nut and washer on the outside of the digester. A fixture designed for this purpose has met with most general approval in digester plants, in that it is easily installed and allows the sensitive bulb to be withdrawn for testing without interfering with the operation of the digester. Recording pressure gauges used on such apparatus are furnished with an oil seal filled with glycerine or some other non-active agent to prevent the fumes from the digester attacking the interior of the instrument.

A common method of operating digesters is for the operator to be furnished with charts which have been marked by means of a template with the curve showing the rate at which the temperature and pressure in the digester is to be raised. The operator then has only to make the red line of the instrument pen follow the pencil line drawn on the chart, and a uniform and proper cook will result. Such a method also prevents the burning of the chips, which often occurs if the process is carried too fast. Twelve hour charts are often used in the "short cook" process with the consequent open time division, although the twenty-four-hour charts are more satisfactory for most operations.

In the making of sulphurous acid used in the sulphite plants, recorders are used to great advantage. The sulphur burners are generally equipped with recording pyrometers and the proper record on these instruments assures the superintendent that over-heating is not taking place, together with the attending sublimation. The most economical use of sulphur will result if the burning temperature is kept at the proper point for correct combustion. The instruments used here are generally combination indicators and recorders, and have a scale range of 1100° C. Since the best temperature for the formation of H_2SO_4 is from 200 to 900° C., and as this is not desired, the gas (SO_2) should be produced at as high a temperature as possible and then cooled as rapidly as possible in the coolers, so that there will never be at any time any considerable volume of gas between the ranges favorable to the production of H_2SO_4 . Recording thermometers in the coolers will guard this point most efficiently and prevent the formation of gypsum. Recording thermometers should then be installed in the absorption system as well as in the coolers and towers of the reclaiming system. All these will help to produce an even quality acid as the effect of temperature on acid is very marked. Cold water should be used in all towers of reclaiming systems and carefully watched by recorders.

Soda, Sulphate and Kraft Processes

Since these processes are much the same as far as the instrument needs are concerned, we will consider them collectively. On the digesters here similar thermometers and gauges are used except in place of the bronze fittings employed for the sensitive bulbs on the thermometers, steel fittings are used. Recording thermometers and vacuum gauges are then used to control the recovery process. In Soda pulp plants particularly, they play an important part when

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922

multiple evaporators are used. Sugar plants have made use of this method for years and it has now become good practice in soda pulp liquor recovery, giving a highly efficient method of control. Specific gravity recorders have also been employed in recovery systems and consist really of a float arrangement attached to the recorder pen and reading direct in degrees Baumé. In the causticizing plants temperature recorders guard the process and a temperature of about 95° C. is generally maintained in such systems as the Dorr. These recorders help to keep a high percentage of recovery. This also applies to the case of sulphate mills when the success of the mill often depends upon the chemical control of the recovery process.

In Bleaching Plants

The bleaching plants of all mills is another department in which recorders have been quite generally installed. In the first place, bleaching powder should be kept cool and dry, and this point is carefully watched by recorders. In the mixing, the temperature would not be allowed to exceed about 70° F., or the resulting bleach will be still better if this temperature is kept even lower. During the bleaching process itself, the chlorination of the fiber of the stock must be carefully watched, for if the stock runs much above 115° F., this action is liable to take place in spots if not throughout, with its consequent danger. Recording thermometers, the bulbs of which are in the stock, guard the operator against this trouble and tell him when his temperature is approaching the danger point.

Since the time allowed for bleaching depends upon the temperature and density, it is desirable to record both of these quantities, particularly the former, which is readily done. This temperature may be made to accelerate the chemical action between the chlorine and the coloring matter and hence should be carefully watched and checked by a recorder. In plants making their own chlorine by the electrolytic method recording ammeters give an excellent check on the process.

Recorders in the Beater Room

In the beater room, recorders are used frequently to show the position of the rolls of the beaters and also at just what time their position was changed. This employs a mechanical time recorder of simple construction, which has been used with good results. On hydraulically operated beaters recording pressure gauges will give the pressure on the lighter bars and roll, while if the beaters are electrically driven, recording wattmeters will record the load upon the same. This last method is being used considerably of late by a few progressive mills and very good results have been obtained by adjusting the beater so that it consumes power only between certain limits, depending upon the type of pulp desired. This same means of recorder control has been applied to Jordans as well as ordinary beaters. Liquid level gauges are also used in the beater room considerably, both on beaters and stuff chests and give, when used with a constant, an accurate measurement of the stock beaten or drawn off.

Machine Room Utility

As applied to paper machines, recording thermometers are used to record the temperature existing in the drying rolls and pressure gauges give similar information with regards to the pressure or vacuum existing in the different sections of the machine. A special thermometer fixture in which the sensitive bulb has been inserted through a journal bearing has been designed to give particularly quick and sensitive readings of the dryer roll temperatures and has greatly improved the drying process in some large mills. A contact thermocouple and pyrometer have also been used to good advantage in obtaining the actual surface temperatures of the calender rolls. At the wet end of the machine a recording pressure gauge should be applied to keep the press roll pressure as near even as possible.

The speed of the paper through the machine has long been an important factor and this is best recorded by means of an electric tachometer, the magneto of which is attached to the spring roll of the machine. This gives an accurate record in feet per minute of the paper through the machine and will show clearly the time and interval during which the machine was down for a "break" or repairs. The electric tachometer recorder may be placed any desired distance from its magneto fixture. Electric time recorders have also been used for this purpose with good success, but tachometers are generally more useful.

In Fine Paper Plants

In the fine paper plants, where paper is treated with various sizes, recording thermometers are utilized to keep this solution at its proper temperature and consistency. A similar use for recorders is found in plants making waxed papers. Fine papers, when being seasoned, are often subjected to very carefully regulated temperature and humidity conditions and recording psychrometers are the best means of keeping the conditions under complete control as desired, while the paper is drying out. There are many other uses in plants auxiliary to the ordinary paper mill and chief among these is the steam power plant. Here recorders are used on the usual applications, such as feed water temperatures, boiler pressures, flue gas temperatures, draft gauges, etc., but it may be well in concluding to make mention of the new long distance electric transmission recording system. This is used to convey pressure, temperature, liquid level, or any other reading over any distance up to several miles. In pulp mills particularly, it enables the fireman or engineer to control the pressure to the digester house or any other part of his system from the end of the line, rather than from the boiler plant. Consequently, an even pressure at the desired point is held throughout the system. The instruments work on a balanced induction circuit principle and are thus unaffected by normal changes in line voltage or frequency.

Co-operation Essential

We have now covered most of the more general uses of recorders in pulp and paper mills, but there are many other applications which individual plants have found most profitable. New needs are always arising and it is only by careful co-operation of the manufacturers of recording instruments and the users, that the best instruments for the work can be installed and the most efficient results obtained.

Throughout the entire paper mill process, from the grinder rolls to the seasoning of fine papers, the recording instrument has already come to play a most helpful part. Ever on the watch, and never sleeping, these recorders serve as silent sentinels in their dual roles of a guide for the operator and a check to the superintendent. That is why the recording instrument has come to be used so extensively in the pulp and paper industry.

File Brief Against Duty on Casein

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 13, 1922.—Although the paper manufacturers were not entirely satisfied with the tariff bill as it was in conference, no very strenuous protests were made regarding any of the paragraphs affecting the paper industry with the exception of paragraph 17A, which deals with casein.

A committee representing 75 coated paper manufacturers filed a brief with the conferees on the tariff bill. The committee is composed of the following: Martin Cantine, chairman; Charles A. Gordon, Walter D. Randall, Charles F. Shirley and Dr. Hugh P. Baker.

In the brief the committee points out misstatements made by Senator Ladd in supporting the duty of 4 cents a pound on casein and sets forth the conditions as they actually exist in the industry. The committee asks that casein be placed on the free list, but states that if it is impossible to do this, the 4-cent rate is entirely unreasonable.

TESTING COLORED MATERIALS FOR FASTNESS-TO-LIGHT*

By H. S. THAYER, B. SC., ATLAS ELECTRIC DEVICES CO., CHICAGO, ILL.

Color is more and more being called upon as a medium of expression. It may be the mellow color of an old master or the gaudy colors of the billboard. A silk dress, a carton of rolled oats or even a so-called comic supplement employs colors that have been designed with great care and applied with no end of skill.

But a most important essential of color is that it shall remain as the artist or designer intended. When the colors fade or, even worse, when only part of the colors fade, the effect is destroyed. Every one who has stood and watched our national flag pass by with its bright colors flashing in the sunshine has been impressed by the sight. But, the impression would be far less effective if the colors of the flag were pale or weak.

In other words, the colors must be fast. We naturally expect greater stability of color in rugs, high grade book-bindings and in our woolen clothing than we would look for in a circus poster. It is well known that all colors fade to a greater or less degree and from a variety of causes. There is a question as to the exact nature of fading but we know that colors are weakened by chlorine and other fumes, by washing, by soap and by light. The chemical action that causes fading is fairly well understood, although this understanding is dependent in some measure upon the various theories of dyeing. It is a very simple matter to determine whether or not chemical action causes fading of color. The fading action of light, however, is not so well understood. It is known that this action is hastened by the presence of air and moisture. Also when a colored material is pressed into close contact with glass, it is much less fast than in the more natural state.

Tests for Fading

It is impossible to predict the fastness-to-light of a certain dye from a general knowledge of the dye itself. It is absolutely essential that the dye be tested in the finished product, whether the product be a textile, an ink or a colored paper. It has sometimes been suggested to substitute a chemical test for an exposure to light test and Bancroft in 1912 suggested the use of hydrogen peroxide for this purpose. Extended experiment, however, with a wide range of colors showed this test to be very unreliable. Chemists are now generally agreed that the only satisfactory thing to do is to expose the finished product directly to the fading rays of light. It then remains to adopt a light that is capable of being standardized and that, in addition, has the important commercial elements of being rapid, cheap and convenient.

The paper manufacturer, no less than other makers of colored material, is confronted with the difficulty of producing paper that is sufficiently fast to the action of sunlight to suit his customers. The purchaser of the paper in his turn is expected to put out a product of high quality and is dependent upon the paper manufacturer in so far as the original quality of the paper is concerned.

This point was brought out forcibly last winter in the case of a very large printing house in Chicago that specializes in the production of telephone directories. It seems that there had been a good deal of complaint because of the fact that the cover paper used on these directories faded out rather quickly, leaving the cover shabby in appearance and making it less attractive as a medium for potential advertisers.

The "Fade-Ometer"

A combination of circumstances made it very important that this printing house decide upon its supply of cover paper for the coming

year but only short space of time was available to come to a decision. The short, overcast days of winter rendered a sun test of the cover paper which was wholly inadequate and, furthermore, the manufacturers of the paper were very reluctant to make any definite statements as to what degree of fastness-to-light might be expected from their product. The printer quickly made up his mind to have the paper tested by the one reliable method in general use. This method is the FADE-OMETER, which employs the violet carbon arc as its source of light for fading purposes. When the term "fastness-to-light" is used it is understood to mean fastness-to-sunlight, which, of course, is the cause of most of the fading of colored material. It follows then that the ideal test for light-fastness would be to expose the material to the rays of the sun, but, as our printer friend found, this is not a practical thing to do, because the sun is very unobliging in a case of this sort. There is such a wide variation in the fading power of the sun's rays, dependent on the season of the year, the time of day, the latitude of the place where the tests are being made and the difference in the atmosphere, that it is well nigh impossible to make a sun test that may be duplicated with any degree of certainty. Any one who has had even the slightest experience with photography knows that the exposures required are very much longer in winter than in summer, so much more so that most amateur photographers give up trying to do any winter work.

Government Tests for "Fastness"

This was expressed recently by a writer in the *American Dyestuff Reporter*, referring to a textile test.

"We may be operating a mill and have a desire to enter a bid on a Government contract. We find that after enumerating exactly the quality of the stock, weave, weight, finish, etc., and several very positive chemical tests, we are informed that the sample must stand thirty days' exposure as well as the standard sample. No account is taken as to the part of the year which shall furnish these thirty days; the latitude, however, may be presumed to be that of Philadelphia.

"It is easy to see how the mill chemist might deceive himself regarding the actual fastness of the dyes he intended using, should he make his exposures in December and then have the Quartermaster's chemist reject the goods after a test in August."

The manufacturer of paper, however, cannot allow himself to be handicapped by any such conditions and finds it absolutely essential to turn to some suitable form of artificial light for his testing purposes.

His problem would be very much simplified if he could standardize upon certain dyes with the assurance of uniform results at all times. Every manufacturer, however, knows that this is impossible. Even when the "absolute fastness" of a dye is satisfactory, it does not follow that the fastness of the goods colored with this dye will be what it should be. By absolute fastness is meant the stability of a solution of a dye when exposed to the rays of a powerful light. It remains, therefore, for the paper mill to test the finished product, if guarantees as to fastness-to-light are to be made. Also, it is important that these tests be made with a light source that is of so uniform a quality that it may be safely accepted as a standard for comparison and is also one that is accepted generally by technical laboratories.

Types of Testing Lights

There are three sources of artificial light that will occur to one as serving this purpose. First of all, the nitrogen-filled in-

*Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

candescence lamp, which is used so much as a color matching lamp, would seem to be suitable, but, only a short trial is needed to demonstrate that is hopelessly slow and of no commercial value as a "fading" light, apart from any technical merit that it may possess. Although the nitrogen filled lamp seems to the eye to be of dazzling whiteness, it really is deficient in actinic rays or rays at the violet end of the spectrum.

The mercury arc light on the other hand, or more especially that form of it known as the quartz tube light or ultra violet light, goes to the other extreme and presents a light for fading that is extremely rich in ultra violet rays and very deficient in the visible rays of the spectrum. In fact, the spectrum of this light, as compared with sunlight, presents a curious appearance. Certain wave lengths are very pronounced with numerous bright lines in the invisible portion of the spectrum and this bright line characteristic is apparent in the visible part of the spectrum. The result is that the chemical action of the light from the quartz tube is selective in its action, whereas, the light of the sun with its nearly continuous spectrum is uniform in its chemical action. The effect of this is to cause a fading action that differs greatly from that of sunlight, so that a test made with the ultra violet light does not always give results that will be found with sunlight. This is especially true in the case of aniline colors, in which case the inaccuracies are numerous and pronounced.

An advantage of the quartz tube light is that it is very rapid in action but on the other hand, it undergoes a continual deterioration with age so that the tests made at different times may not be relied upon as uniform.

The Arc Light

The remaining form of fading light is then the old familiar arc light which has been made in a variety of forms. Every one is familiar with the flaming arc with its intense light and brilliant colors. What is known as the white flame arc employing a specially impregnated carbon to give the color of sunlight offered at one time a promising field of investigation. The spectrum of the white flame arc is almost exactly a duplicate of the solar spectrum but, as a commercial testing proposition, this form of arc is far from satisfactory. The electricity consumption is excessive, the special electrodes are costly and short lived and the heat developed is so great that it is difficult to keep the test specimens at a reasonable temperature.

The enclosed arc with its lower current consumption and general adaptability to laboratory use was studied with the aid of the manufacturers of arc electrodes. The spectrum analysis of the various forms of enclosed arc gave a leading clue and there was developed a high voltage arc giving at the violet end of its spectrum a very close reproduction of the spectrum of the sun. With this as a basis, the problem was attacked of arranging this light in a convenient form so proportioned that the light intensity and the temperature would duplicate the conditions found in the midday summer sun. The Fade-Ometer was the result of this effort. And it has since justified itself by its adoption in many of the foremost technical laboratories throughout the world.

The Fade-Ometer employs the violet carbon arc mounted in a cabinet with 40 specimen holders located at a uniform distance of 10 inches from the arc itself. A pan of water provides the moisture necessary to simulate actual conditions. The arc may be arranged for different voltages and types of current.

How "Light-Fastness" Varies

In this matter of fastness-to-light perhaps the most important thing is a satisfactory standard that users the world over can refer to. Fastness-to-light is a property that has never been at all well defined remaining pretty much a matter of personal opinion. As an example, I might quote from the recommendation of the National Council of Dye & Colors as published in the *Color Trade Journal* for June of this year. Fastness-to-light standards are specified as follows:

'No 1 10 days' south exposure inside window or 10 hours to test lamp, No 2—20 days' south exposure inside window or 20 hours to test lamp, No 3—30 days' south exposure inside window or 30 hours to test lamp." Only a very little reflection is needed to show that this specification is so loose as to have no real value. A 10 day south exposure in the month of November, for instance, would cause less fading than a 5-hour exposure to the rays of the sun in the middle of a clear July day.

Then, too, the fading power of sunlight varies widely in different parts of the world. Even in our own country the variation is very pronounced. In 1920-21 Mr. H. B. Gordon of the U. S. Testing Co. New York made some extensive tests of fastness-to-light using the sunlight conditions found in New Jersey and in Arizona. Mr. Gordon's conclusions may be best expressed in his own words:

'The action of New Jersey summer sun was, on the average, four or five times as rapid, and that of the violet carbon arc, as used was three or four times as rapid as that of the Arizona winter sun. The variations in relative rapidity of action are considerable, but the relation of the carbon arc to either kind of sunlight appears to be rather more constant than the relation between the two kinds of sunlight.'

'The extremely rapid effect of summer sunlight in New Jersey, as compared to that of winter sunlight in Arizona, is rather surprising to one who is acquainted with the brilliancy of the sun in Arizona. It is probably due in a great measure, to the high humidity in New Jersey.'

Owing to the uncertainty of weather conditions in the Eastern part of the country, it seems that if any standard test is to be made with sunlight it should be made in Arizona or some other part of the southwest where weather conditions are more reliable. Probably summer sunlight would be a better standard than that of winter, but in the writer's opinion an artificial light, being more reproducible than sunlight and at hand when needed is best for making standard tests. The most suitable lamp used in this study is evidently the violet carbon arc.

Fire Destroys Ground Wood Mill at Montague, Me.

[FROM OUR REGULAR CORRESPONDENT]

MONTAGUE, Me. September 11 1922—Fire, supposed to have been caused by a hot box, completely destroyed the ground wood pulp mill of the International Paper Company at Montague last Tuesday, together with a small storeroom and a quantity of wood pulp. The loss is estimated at \$100,000, fully covered by insurance.

The mill which had been shut down on account of a strike since May 1 1921 so far as the manufacture of pulp was concerned, had recently been used for tossing pulpwood of which 20,000 cords had been on hand for some years, and a crew of 30 men was employed. The wood has been shipped at the rate of six cars a day this summer to other mills of the International Company in western Maine.

The fire started soon after 5 o'clock Tuesday afternoon, while the engineer was at the office of Superintendent White, giving notice of the hot box and announcing his intention of shutting down for an hour or two. The water tank on the mill roof was empty and as there was no other available supply of water for fire fighting with the equipment at hand the mill was burned flat. It was an old building erected 30 years ago but its equipment was excellent. The mill when running at full capacity turned out 40 tons of ground wood pulp daily.

Pike Rapids Paper Co. to Build Dam

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C. September 13 1922—The Pike Rapids Paper Company has filed an application with the Federal Water Power Commission for a preliminary permit to construct a power dam on the Mississippi River at a point near Royalton, Minn.

STEEL BELTS AND THEIR APPLICATION TO THE SOLUTION OF CONVEYING PROBLEMS*

BY HARRY CARLSON, OF SANDVIK STEEL WORKS, INC., SANDVIKEN, SWEDEN

The steel belt is by no means a new development, although it only recently has been placed on the American market. During the past thirteen years it has been extensively used in Europe in the many phases of the engineering field over 1,300 installations already having been made for conveying such materials as clinker, cement, sand, rock, ore and ore concentrate, coal, coke and charcoal, carbide, silica, soda, salt, sugar, cossettes and beet pulp, milk powder, yeast, vegetables, sweets and chocolate, deals, battens, slabs, edgings, chips and sawdust, clay, gypsum, brick and briquettes, bags, boxes, packages, steel forgings, gun cotton and glass.

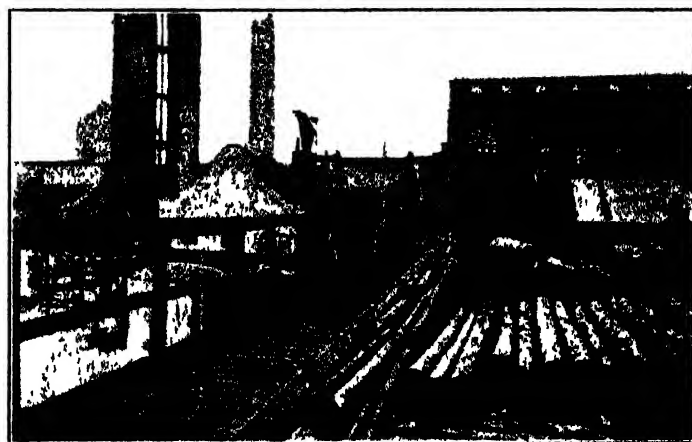
Much experimentation and conscientious application has been necessary to bring it to its present state of development, where it has, without a question of doubt, demonstrated its decided superiority over conveyor belts at present employed, as well as over other types of conveyor equipment. In every installation made it has been found to be both efficient and economical.

The adaptability of steel belts for solving conveyor problems in all phases of the industrial field for all kinds of materials has by no means been completed, but is still in the process of development. Intimate co-operation between the manufacturers, who are familiar with the particular features of design so essential to steel belts, and the customer, who wants certain work performed at a given time and under given conditions, is necessary in order to arrive at the end desired.

I shall endeavor in this paper to discuss the steel belt from a general point of view, giving you an idea as to what the steel belt is, how it is set up and works. A short history of the steel belt

cold-rolled materials, and for this purpose acquired controlling interest in a large number of the world-famous Swedish mines producing iron ores low in sulphur and phosphorus. It may be interesting to note that the expression "Swedish Steel" was originally applied to steel made from these ores.

Innumerable examples evidence the fact that no matter how good



"SANDVIK" CONVEYOR AT ONE OF SWEDEN'S BIGGEST SULPHUR MILLS

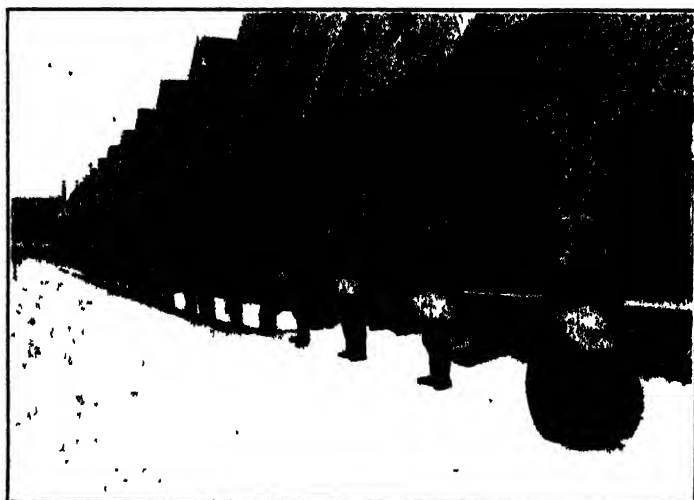
the raw materials may be, skilled labor is required to obtain a high-class finished product. The Sandvik Steel Works were among the first to produce high-grade steel; in fact, the first to produce Bessemer steel on a commercial basis, and have persistently kept up traditions. As a result, they have today at their disposal a force of labor trained through generations for this particular kind of work.

The Sandvik steel conveyor belt was not originally manufactured for this purpose, but the application as a belt was found for the exceptionally long, wide, straight and smooth steel strips that the rolling mill was capable of producing. After patient experimenting covering a period of years, the methods of rolling, hardening and tempering were perfected and the product accordingly improved to meet its particular requirements before it was finally placed on the European market thirteen years ago.

The many attempts made to utilize steel in some shape or other, to improve the ordinary conveyor belts, and further the successful applications of the Sandvik belt in almost every phase of the industry, should evidence the fact that present belts need improvement. They can be supplanted by something better, and it is interesting to note that the steel belt in most cases more satisfactorily meets the requirements of a conveyor belt. It is self-evident that no other conveyor belt material can have the same high-wear-resisting qualities as the steel belt.

Wear on Steel Belts

It is a well-known fact that a piece of steel subjected repeatedly to stresses far below the ultimate strength will break, due to the destruction of its molecular structure, crystallization, or "fatigue." For the ordinary grade of steel used in machine building, the maximum bending stresses allowed are limited to about 12,000 lbs. per square inch; for high-grade alloyed steels the stresses allowed may run considerably higher.



"SANDVIK" STEEL BELT 285 FEET LONG AND 16 INCHES WIDE

known on the market as the Sandvik belt will undoubtedly be of interest to you.

Steel Belt History

The manufacture of steel belts was started about thirteen years ago by the Sandvik Steel Works of Sandviken, Sweden, which has had a wide experience of over fifty years in the cold rolling of steel. The company had always made a specialty of high-grade

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

The Sandvik steel belt is subjected to a stress of 28,000 to 30,000 pounds per square inch when running over a standard pulley 40 inches in diameter. We might mention incidentally that in the standard practice of steel belt design the width of pulley face is $\frac{1}{4}$ of the width of belt, crowned in the usual way but made flat in the center $\frac{1}{3}$ of the width of the pulley face. In addition to the aforementioned stresses it has to take the initial tension and the pull required, which, however, in contrast to other belts, are nominal for ordinary installations, compared to the bending stresses. The latter are determined by the proportion between the thickness of the belt and the diameter of the pulley. For practical reasons a high carbon steel strip of certain width cannot be rolled to more than a certain thickness, hence it is necessary to establish a standard diameter for pulleys, specific rules for the location of idlers, especially when the belt is to be caught up, etc.

The Sandvik belt is made of the very best Swedish charcoal steel, cold rolled, hardened and tempered—hence, it possesses a hard, smooth and dense surface, evidenced by hundreds of successful installations in the chemical field conveying wet and hot material, and running in the open air subjected to the influence of rain, snow and sunshine, and under extreme changes of temperature. The steel belt does not deteriorate when idle—the smooth surface facilitates an unexcelled cleanliness—to be obtained by the simplest means; finally, the fact that stresses due to initial tension and pull are nominal compared to bending stresses accounts for the possibility of making conveyors perforated without influencing appreciably the life of the belt since the perforating has no influence on the bending stresses, the latter being exclusively determined by the proportion between the belt and the diameter of the pulley.

Steel Belt Specifications

At the present time it is rolled in widths up to 16 inches, one-piece lengths up to 350 feet, and thicknesses up to .04 inches. The longitudinal edges are rounded and smooth. The flexibility of the material may be judged from the fact that the coil of 300 feet of 16" belt is sent out packed in a case 2" square x 1'10" deep, weighing approximately 2 lbs per ft run.

The Sandvik conveyor is designed in two ways, either with the conveying strand sliding on a wooden support, sometimes fitted with skirting boards, trough-like, the return strand being supported on idlers, or else both strands of the band are carried on rollers in the usual fashion. The sliding type, with or without skirting boards, is extensively used for conveying non-abrasive material. Next to no wear is caused in this type, even for conveyors of considerable length, as the surface of the runners soon acquires such a polish that the friction and consequently the power consumption is almost negligible.

As compared with flat rubber belts of the same width, the steel belt possesses greater transverse rigidity and therefore a higher capacity, as the edges, even with a one-sided load, do not yield in a downward direction. This allows a relatively broader part of the belt to be used for carrying the load. These attributes are obvious and are due to the fact that the steel belt is less flexible than the textile fabric.

The speed at which the steel belt should be run depends on the length of conveyor—ordinarily it varies between 135 and 300 ft per minute, and capacity is thereby determined. The average speed, however, for the average length conveyor is about 200 ft per minute. Considerable attention is given to the proper designing of feeding hoppers to ensure the maximum load per foot of belt.

The joint is an ordinary riveted lap joint with short overlap and can be made complete in less than an hour. Counter-sunk rivets are used. For punching the holes a special tool is supplied which makes the jointing work extremely simple. It has been found after extensive experiments with many different kinds of joints that the one herein mentioned is by far the simplest, most efficient and economical.

In many cases existing structure can be easily adapted to accommodate steel belts, and under favorable conditions existing end pulleys and idlers can, with a little modification, be kept in use also. Erection is comparatively simple and full instructions are supplied. Most customers undertake the erection themselves, merely having an experienced erector sent along by the manufacturers to generally inspect after completion, mount the belt, make the first joint, and start up.

Special Advantages of Steel Belting

A special feature is the remarkable ease and simplicity with which material can be discharged at any desired point along the conveyor without the use of cumbersome and expensive trippers. The belt does not stretch and the tension devices are therefore very simple, as they only have to take up trifling variations in length, caused by changes of temperature.

Unlike other conveyors, the drive can be arranged either at the head or tail ends to suit the local conditions of purchaser, and is equally efficient at either end. When required, both strands can be used simultaneously for conveying in opposite directions, and under suitable conditions the conveyor can be made reversible.

Inclines vary somewhat with the material being handled. In a general way a figure of 1 in 4 is the limit for a smooth belt which has to be scraped off for unloading, but if terminal unloading only is to be used, slats can be affixed to the belt at intervals and the inclines increased to about 1 in 2.75.

It has frequently happened that when elevators have been favored for a lay-out on account of the incline, a conveyor lay-out has satisfactorily solved the problem at lower cost and at much greater reliability and freedom from a large number of moving and wearing parts.

The steel belt conveyor is not a "cure-all," but is claimed to be simpler and more durable than the already simple band conveyor, to offer stronger material and avoid the large number of working parts of drag link and gravity bucket conveyors, and to be competitive in price.

It is obvious that the introduction of the steel belt has widened the field of application of the belt conveyor, which previously had not been suited for conveying hot and sticky materials when only the textile and rubber belts were available, and it should be welcomed by the engineer interested in the handling of materials, as the steel belt is the ideal system of conveying. Such sticky material as sugar, for instance, can be cleanly and efficiently scraped off. Sharp-edge cutting materials, such as glass, can also be transported on this belt. Finally, materials which, on account of their high temperature, cannot be economically handled on belts of rubber or balata, can be carried readily on the steel belt.

Heat Waste Elimination by Pipe Covering

The accompanying table gives the economical thickness (nearest commercial size) of 85 per cent magnesia pipe covering for various pipe sizes, steam consumption and coal prices. It is based on average figures for boiler efficiency, heating value of coal and cost of insulating applied. The pipes are assumed to contain steam continuously.

Size of pipe inches	Hot water 175° F.			Steam pressure 5 lb.			Steam pressure 100 lb.			Steam pressure 200 lb. 150° F. superheat			Coal per ton
	\$4	\$6	\$8	\$4	\$6	\$8	\$4	\$6	\$8	\$4	\$6	\$8	
1	S	S	S	S	S	S	1 1/2	DS	1 1/2	DS	2	2	3
1 1/2	S	S	1 1/2	S	S	1 1/2	1 1/2	DS	2	DS	2	3	3
2	S	S	2	S	S	2	DS	DS	3	DS	3	3	3
3	S	1 1/2	2	1 1/2	1 1/2	2	DS	DS	3	3	3	4	4
4	S	1 1/2	2	1 1/2	1 1/2	3	DS	DS	3	3 1/2	4	4	4
6	S	1 1/2	2	1 1/2	1 1/2	3	DS	DS	4	3 1/2	4	5	5
8	1 1/2	2	2 1/2	2	2	3 1/2	3	4	4 1/2	4	5	6	

S. Standard thickness, about $\frac{3}{4}$ inch for pipes smaller than 2 inch, to $1\frac{1}{2}$ inch thickness for pipes over 10 inch diameter.

DS. Two standard-thick layers.

3 inches is usually made by two $1\frac{1}{2}$ inch layers.

Power

"ROTARY FILTERS FOR THE WASHING OF PAPER PULP AND FOR FILTERING AND WASHING CAUSTIC LIME MUD"*

By G. D. DICKEY, INDUSTRIAL FILTRATION CORPORATION

Continuous vacuum filters should be of particular interest to the paper industry, as they owe their inception to paper mill engineers. The first recorded rotary drum filters were those developed in France about 1885 for the thickening of paper pulp, and did not differ a great deal from the ordinary thickeners and save-alls used in paper mills at the present time. Several schemes were tried in conjunction with that of a rotating screen cylinder, most of them incorporating a traveling belt, which encircled the drum and then passed on to a series of rolls, where additional drying was effected.

About 1896 the Solvay Company in Belgium took out patents on a rotating drum, which, instead of being a wire cylinder, consisted of a drum with solid ends and a perforated face, which face was covered with a canvas filtering medium. The machines were connected to large size vacuum pumps and the solids were removed by scrapers resting against the filter drums. They gave very satisfactory results in the de-watering of bicarbonate of soda, and the same design is still used in many plants. The same idea was further improved by George Moore in 1902, when he invented the multiple compartment rotary filter for the handling of gold and silver tailings in the cyanide process. With a few changes, this is the type of machine which is employed today in the chemical and industrial world for automatic filtering. One of the first installations to

eral use. The first is that of ordinary settling tanks, the second is where false bottom tanks and suction pumps are used, and the third is where filters are employed. In the first case, the separation of the sludge from the caustic liquor is by means of a series of settling tanks and decantation, and washing is by dilution. There are several objections to this method, among the most important of which are the following: First, a great deal of room is necessary for the settling tanks; second, a long

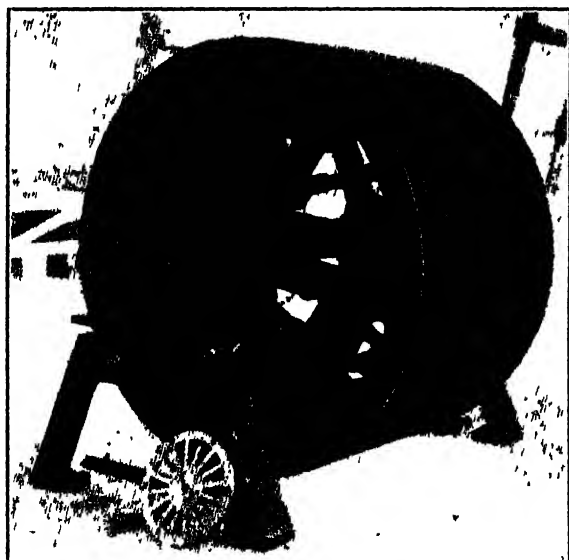


FIG. I—DRUM OF ROTARY

be made in industrial work was in 1916, when a Zenith Rotary Filter was installed in the Dupont works at Hopewell for the handling of their caustic lime mud. Since that time numerous installations have been made in causticizing plants, and sufficient time has elapsed to obtain reliable figures on their performance, and pass judgment upon their economical efficiency.

Three Separation Methods

In causticizing, there are three methods of separation in gen-



FIG. II—MACHINE WITH HIGH CONTAINERS AND CANVAS FILTERING MEDIUM

period of time is required for each batch, third, more or less intelligent labor is needed; fourth, the sludge is discharged wet; fifth, there is an appreciable amount of soda lost with the discharged solids, and sixth, the final decanted liquors are very weak, making heavy work for the evaporators.

The second method, namely that of false bottom tanks in conjunction with vacuum pumps materially reduces the amount of space occupied by settling tanks, it decreases the length of the cycle of operation, and reduces the percentage of wash water needed. It has the objection, however, that the cake must either be dug out or flushed out, the solids are usually several feet thick in the filter tank, and badly cracked before washing commences so that a large proportion of the wash water runs through these cracks, giving a dilute effluent and leaving considerable soda in the cake; finally, the operation is intermittent and requires labor.

The third method, or that whereby filters are employed, may be subdivided into two classes—that where pressure leaf filters are used, and that where continuous vacuum filters are employed. The principal difference between the two is that the former requires labor and an intermittent operation, there is difficulty in maintaining proper agitation for building up a uniform cake, which is necessary for washing efficiency. Great care must be taken in emptying the container of excess sludge before admitting the wash water in order that the cake will neither crack or fall off. Finally, the replacement of the cloth is a laborious operation. The continuous filter, on the other hand, consisting as it does of a drum hung in a container

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922

equipped with an agitator, operates by vacuum, during every revolution of the drum picks up the solids, washes, dries and discharges them continuously and automatically, thus eliminates the objections to other methods mentioned, without embodying any new complications.

Construction of Rotary Filter

The Rotary Filter of the multiple compartment design, as illustrated (figures I-II) consists of a drum whose periphery is divided into a number of compartments, each being connected by a separate pipe line to the multiple valve hub, which is cored out to receive these lines. The compartments are covered with a wire screen suitably supported, and over this, encircling the entire drum, is stretched the filtering medium, each compartment being kept separate and distinct and giving a smooth peripheral surface to the drum. The valve hub rotates against a stationary valve cap, which is so arranged that each compartment can be subjected to suction as well as pressure during any portion of the cycle. Provision is made in the valve cap for applying suction and for drawing off the filtrate and wash water separately if desired. The filter drum is hung in a hopper bottom container, which is provided with mechanical agitation. The scraper constantly removes the filter cake as the drum revolves. Washing is accomplished by means of sprays, which play on the surface of the drum just after it emerges from the container with its accumulated solids.

The caustic lime mud may be fed directly to the rotary filter after the strike has been made, or it may be allowed to settle and the sludge only sent to the filter (which is a better procedure where it can be employed) or the sludge may be mixed with fresh water and one decantation made before feeding to the filter.

In the first case a larger filter will be necessary in order to handle the same capacities, as the sludge will be much more

TABLE I

	Mud discharged from the settling tanks to the tailing dump	Cake as discharged from Zenith rotary filter to the tailing dump
CaCO_3	40.02 %	51.60%
Ca(OH)_2	5.13	6.58
SiO_2	4.01	5.14
NaOH	2.13	0.20
$\text{Fe}_2\text{O}_3 + \text{Al}_2\text{O}_3$	0.30	0.38
H_2O	48.10	35.20
Etc.	0.31	0.40
	100.00	100.00

dilute, and a greater quantity of liquor must be drawn through to deliver the same amount of discharged cake. In the second and third cases, the sizes do not differ, but in the second case, as in the first, all iron construction must be used, and as a rule, monel metal or similar material employed as a filtering medium. In the third case, where more dilute liquors are encountered, iron and wood with canvas as a filtering medium may be used, although, of course, they are not as desirable as more alkali resisting materials.

Efficiency in Washing and Drying

It has been found that the most efficient cake to wash and dry is one of about $\frac{3}{8}$ " in thickness, and as the thickness of the cake is determined by the speed at which the filter drum is turned (usually $\frac{1}{4}$ r.p.m.) the proportion of solids to liquids, temperature, etc., being constant, the desired thickness of cake can be maintained by the operator without difficulty (figure III).

As a filter cake built up by means of suction behind a filtering medium, which suction is equivalent to 14 pounds pressure, is equi-resistant and porous throughout, the application of sufficient wash water to replace the mother liquid held in the cake as a moisture content will theoretically give a clean product. This holds true in practice, for the ordinary free moisture, but there is always an amount of moisture held as a film around the individual particles and as they lie against one another in

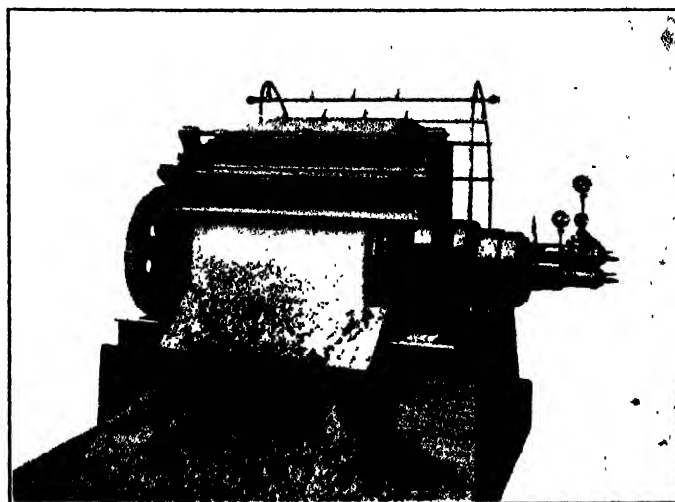


FIG. III—ROTARY FILTER DISCHARGING

normal piling, which causes about 1 per cent of causticity to be held in the discharged cake, despite the addition of excess wash water. In order to remove this final percentage economically, the cake is discharged into a small mixing tank where the wash water from a second filter is added and the resultant slurry sent over the second machine. This will enable a cake to be discharged with about .2 per cent caustic remaining in it, and in a dry enough form (30 to 35 per cent) for calcining or carrying away. (Table I.) Usually, where calcining is carried on, however, a second machine is not used, as the cycle is closed and the caustic remaining in the cake from the first machine is not lost. The table shows the average consistency of sludge as discharged from a settling tank, as compared with that from a rotary filter.

Early Experiments

When rotary vacuum filters were first installed in paper mills for causticizing, the thought naturally arose among the paper mill engineers as to the application of this machine to the washing of paper pulp, especially as they were similar in general principle to the thickeners and save alls with which they were familiar, the idea being to reduce the wash required by pan washers or diffusers, practically eliminate labor, as the operation would be continuous and automatic, cut down the time of washing the pulp, and reduce the soda losses. Several machines were tried out experimentally, but rather numerous difficulties were encountered; first of all, with the dilute stock encountered from the digesters, it was very difficult to build up a filter cake, even though high container machines were used, equipped with proper agitation and extra sized pipe lines for taking care of the form employed. It was finally decided to use preliminary thickening tanks, and these enabled an even cake to be built up which did not slough off as the filter drum emerged into the air. This necessitated intermittent operation in preparing the stock for feeding to the filter, however, and complicated the equipment, especially as in order to obtain a clean cake a second filter was usually necessary.



FIG. IV--THE DE-WATERER

To handle stock directly and get away from the sloughing off of the filter cake and the intermittent mixing tanks, the Rotary Hopper Dewaterer, as illustrated, was tried out. This machine had all the advantages of the Rotary Filter and in addition enabled

the stock to be fed directly to the hoppers without any auxiliary thickening tanks or agitation in the machine. The de-waterer (figure IV) consists primarily of a series of hoppers, like Buchner funnels, arranged radially about a central shaft and connected to a multiple valve hub, as are the compartments of rotary filters previously described. The dilute paper stock may be fed directly from the digesters to the hoppers by means of an overhead pipe. Suction is used to draw away the excess liquor, leaving a cake of the desired thickness (usually about $\frac{3}{4}$ "), governed by the speed at which the machine is revolved. The cake may be washed by applying wash water from perforated pipes or sprays into the hoppers, and the hoppers discharged by compressed air or steam on to a transfer belt as they become inverted, the discharged paper stock containing about 75 per cent moisture. In some cases, it has been found desirable, as with the rotary filters, to use two machines, discharging from the first into a mixing tank, and refiltering

Continuous Filters Required

At the present time the tendency in all lines of manufacturing is to employ continuous and automatic machinery wherever economically feasible, and this is particularly true in paper manufacturing. Therefore, the use of Continuous Rotary Filters for caustic lime mud and Rotary Hopper Dewaterers for the washing of paper pulp are of special interest, particularly because they are continuous and automatic in operation and have a low cost of maintenance.

It would be well worth the while of any paper manufacturers to investigate the possibilities of these two types of apparatus, as they appear to be the most modern and efficient machines which have been developed for their particular work up to the present time.

SAFETY AND EFFICIENCY APPLIANCES FOR THE BOILER PLANT*

BY WALTER C. JUDGE, VICE-PRES. AND COMBUSTION ENGINEER OF THE PAUL B. HUYETTE CO., INC., PHILADELPHIA AND NEW YORK

Many accidents in the power plant have been caused by incorrect water level in the boiler, low water causing damage to the boiler and high water damage to the engine. To prevent such accidents, a number of years ago there was designed the Reliance Safety Water Column, the construction of which is such as to sound a shrill whistle alarm each time the water arrives at a position either too high or too low in the boiler. Improvements in recent years on this column have made it possible to not only sound a whistle but also to cause a bell to sound or light to flash in the office of the chief engineer or any other distant point desired. To this electrical connection can also be added a record to keep track of each time the improper water level is being carried in the boiler.

There has been, on the part of a few, an erroneous impression regarding safety water columns. This impression was to the effect that the water column was placed on the boiler to inform the fireman that it was time to turn on or off the boiler feed water. This is not the proper use at all of a safety water column. It is placed on the boiler rather to inform those in authority whether or not the fireman has paid close enough attention to the water line and whether he has permitted the water to arrive at a point too high or too low for safety.

Old Style Gauges Dangerous

Many accidents have also been caused by old style water gauges and gauge cocks where it was necessary for the fireman to climb up a ladder and shut off the water gauge and in many cases climb the ladder to try the gauge cock. Mr. Paul B. Huyette years ago saw the need of something more convenient and designed the PBH

quick-closing, chain-operated water gauge. This gauge has a quadruple thread and can be fully opened by a quarter turn of the valve. Both the stem nut and the compression nut, which take the gauge glass, were made extremely large to prevent leakage under high pressures. In fact, the gauge glass nut can be tightened with the fingers sufficiently to prevent leakage. To close the gauge it is only necessary for the fireman to give a pull on a chain within easy reach of the floor.

A few years later, Mr. Huyette carried this same idea further and designed what is known as the PBH quick-opening, self-closing gauge cock. This can also be operated by a chain from the floor. The weight fitted on the stem of the cock makes it self closing. It opens and closes with a turning motion, the same way exactly that a valve is opened and closed. A copper composition pencil is fitted in the end of the stem. This comes in contact with a brass seat, therefore, making an absolutely tight joint with all of the wear placed on the pencil, which can be renewed for a few cents. These cocks, with ordinary care and attention, last for years. At the present time, there are upwards of 100,000 boilers equipped with PBH water gauges and gauge cocks, the fittings having been adopted as standard by many of the boiler companies.

Numerous boiler room attendants have been injured by flying glass when a gauge glass breaks. As protection to the boiler room men, a few years ago, Mr. Huyette designed and perfected what is now known as the PBH gauge glass protector. This is really a glass guard placed around the gauge glass so that the water is plainly visible right through the protector. In the construction of the protector, "Safetee Glass" is employed which will not fly or shatter; consequently the former hazard of the boiler room attendants is eliminated and in addition it has been proved that gauge glasses last for a much longer period with this protector.

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

surrounding them as the cold drafts play an important part in breaking gauge glasses and, of course, with the protector in use, the drafts striking the gauge glass are warded off.

Fuel Economy

In recent years, the necessity for economy in burning fuel has been brought out forcibly and thousands of plants are now making a thorough study in the theory and practice of combustion. Engineers have discovered that one of the first points to which attention must be given is the drafts employed in burning the fuel. In many boiler plants today, however, every boiler in the plant is operated with a different draft. If, therefore, a plant contains ten boilers, this naturally presents ten different combustion problems which must be studied; hence the necessity of first equalizing these drafts by regulating the hand damper with which each boiler is equipped.

To measure the draft over the fire, which is by far the best place to take the readings, a draft sensitive enough to head in hundredths of an inch should be employed. The Hays differential draft gauge was designed by Joseph W. Hays for this particular purpose. The gauge is so designed that it can expand and contract considerably with no danger of breakage. It can be placed, therefore, right on the boiler front in full view of the fireman.

Noting Fuel Resistance

A micrometer screw or plunger is fitted into the oil well, making it possible to bring the liquid in the gauge to the zero point by a simple turn of the thumb screw. This is of decided advantage in calibrating the gauge. A copper flexible connection fitted to the oil well is equipped with a standard $\frac{1}{4}$ " union, making it possible to connect the gauge direct to $\frac{1}{4}$ " pipe and, therefore, eliminate all rubber tubing. With a gauge of this type on the boiler front, any change whatever in fuel resistance can be instantly noted. Therefore, slight holes in the fire, fires too thick or too thin or any other condition which would tend to lower efficiency can be instantly spotted and corrected, in fact, a differential draft gauge is of such extreme value in the boiler plant and so small in cost that it does not behoove any engineer to attempt to run a boiler plant without draft gauges on each boiler.

Analyzing Flue Gases

In order to make a study of drafts and to know positively what draft is best for any particular load condition, it is necessary to make a study of the escaping flue gases. For this purpose, Joseph W. Hays invented what is known as the Hays Gas Analysis Instrument. This instrument is constructed in a small metal case with very little rubber tubing. Steel wool is used in the absorption pipettes. This serves to cut the gas up into small molecules and also gives considerable exposed surface to the chemical reagent, thus making for extremely rapid absorption. A test for CO_2 can be made in 30 seconds and a complete analysis for CO_2 , O_2 and CO in from three to five minutes.

Spasmodic tests run with a hand instrument, while they are of considerable value, do not by any means indicate that the plant is running at a high degree of efficiency. To maintain high efficiency, it is essential that a continuous record of CO_2 in the flue gases be made. Toward this end, Mr. Joseph W. Hays invented and designed the Hays CO_2 & Draft Recorder. This recorder will give a complete 24-hour record of both CO_2 and draft on the same chart, thus making it possible for the engineer in authority to not only know at what time during the 24-hour period the CO_2 was running low but also in most cases what caused it to run low as the draft record plays a prominent part in discovering the cause for low CO_2 .

For instance, a hole in the fire will not only bring down the CO_2 but also bring down the draft. Fire covered too heavy with fuel in one charge will ordinarily bring down the CO_2 and send up the draft and there are many other points of advantage in having the combined record of draft and CO_2 on the same chart.

Efficiency of Recorders

Each Hays Recorder is also equipped with a low efficiency alarm contact. This contact is adjustable and can be set to sound at any percentage of CO_2 desired. It will then sound at that percentage and everything below it. As many bells and buzzers can be placed on the circuit as desired or electric bulbs can be employed where wanted.

One need only visit a number of different boiler plants and watch the firemen work to be entirely convinced as to the real meaning of CO_2 recorders in maintaining high efficiency. Different methods of firing are found among various firemen. Some put on enough coal to last for an hour; others put on a few shovelfuls only at a time. Some coke the fire in the front; others coke the fire in the back. What method is best suited to the plant is hard indeed to ascertain without instruments to indicate the results being obtained. However, in the large majority of cases, the light firing system is by far the best in view of the fact that it requires temperature to completely burn the fuel, and if the fire is covered with fuel, the temperature is considerably lowered and some unburned gas escapes; particularly the hydrogen which is usually liberated within a few minutes after being placed on the fuel bed. Hydrogen, of course, is extremely high in heat value, containing four times as many heat units as carbon.

The Elimination of CO

There is much theory published regarding the elimination of CO and in most cases writers states that CO is formed due to lack of air and the furnace should have more air when CO is present. I have personally found, from numerous tests, that CO is more likely to occur at 10% CO_2 and below 10 than it is if the CO_2 is constantly carried at 14 and 15% CO_2 .

In a recent test, as high as $\frac{1}{8}$ /10% CO was found at 9% CO_2 . Rather than give the fire more air, the air supply was decreased and the fire leveled. The CO_2 was increased until it finally reached 16.2, at which time there was but 6/10 of 1% CO in the flue gases.

My studies and tests along this line have caused me to believe that far more CO is likely to be present with low temperatures and large volumes of excess air than would be found under the higher temperatures with low quantities of excess air such as are present at 15% CO_2 . In other words, a far better condition would be 35% excess air under a temperature of 2,800 degrees than 100% excess air under a temperature of 2,300 degrees; the first being equivalent to approximately 15% CO_2 , the second being equivalent to approximately 10% CO_2 , for certainly at 15% CO_2 we have better mixture, higher temperature and comparatively more space due to the lesser volume of gas, and when you consider that the causes of CO in their proper order are Lack of Space, Lack of Temperature, Lack of Mixture, Lack of Air and that we obtain the first three of these with high CO_2 , it is apparent that there would be less likelihood of CO existing.

The principle of the Hays recorder follows very closely the principle of the orsat, known to all engineers and chemists and used the world over as the standard for accuracy. The gas is accurately measured and brought to atmospheric pressure and then is maintained at a constant temperature throughout the analysis by means of water jacket surrounding the measuring and absorption pipettes. The design of the machine is such that the fresh water entering the instrument never comes in contact with the gas measured for analysis. This is of extreme importance when you consider the fact that fresh water will absorb CO_2 .

A sufficient number of heavy moulded glass parts is used to make the entire operation of the recorder visible to the eye without weakening the construction.

In view of the fact that such large savings in fuel have been made in power plants of all kinds and sizes by the use of gas analysis apparatus and draft gauges, a fact which is known to most all chemists and engineers, action should be taken in all establishments that have not made this study for the sake of fuel economy.

THE ORIGINAL DRYER APPLIED TO WALL-PAPER AND COATED PAPER*

BY JEROME D. STEIN, DISTRICT MGR., DRYER DIVISION, GRINNELL COMPANY, INC., NEW YORK

The Grinnell Wall-Paper and Coated Paper Dryers were only offered to the trade after years of laboratory and field experience and their performance is absolutely guaranteed. Before selling any equipment, we send an engineer to carefully study local conditions existing at a plant and then dry samples of the wet material at our research laboratories. The dried samples are returned to the manufacturer for his inspection, and the quality of the finished product must receive his approval before anything further is done. As a result of these tests, which are very carefully made under the supervision of a trained technical corps, we are in a position to recom-

Our engineers must now provide for (1) an adequate heat supply, (2) a sufficient amount of air to absorb the moisture evaporated and removal of this air, (3) a proper rate of evaporation from the material requiring proper air velocity and (4) such temperature and humidity control which will protect the material from injury in the process of drying.

The Grinnell Wall-Paper and Coated Paper Dryers are of the atmospheric type. The machines were developed to replace the old and antiquated drying racks from which the paper hung in festoons. These racks are often two hundred feet or more in length.

We build our housing right around your present festoon system and utilize the same conveying apparatus taking your paper from the printing, coating or grounding machines. The Grinnell method of air circulation is applied, and we can give you a machine 27 feet in length guaranteed to dry 600 rolls of wall-paper 8 yds. each per hour, thus saving you a tremendous amount of floor space. Our equipment is all built in sections, which can be readily joined together, or to one of our initial installations which have been previously made. The sections are each 6'-8" long, and by adding two additional sections, for example to the above machine, the output can be increased to 900 rolls per hour. Each section requires $\frac{3}{4}$ h. p. for driving its fans, or $1\frac{1}{2}$ h. p. is used for the 600 and $2\frac{1}{4}$ h. p. for the 900 roll machine. To the above dimension approximately 20 feet must be allowed for aging at the feed and 12 feet allowed for cooling at the discharge end of each dryer. Besides the saving in floor space, there is a tremendous reduction in the drying time. We can also dry sandpaper of different grades, coated paper and similar materials.

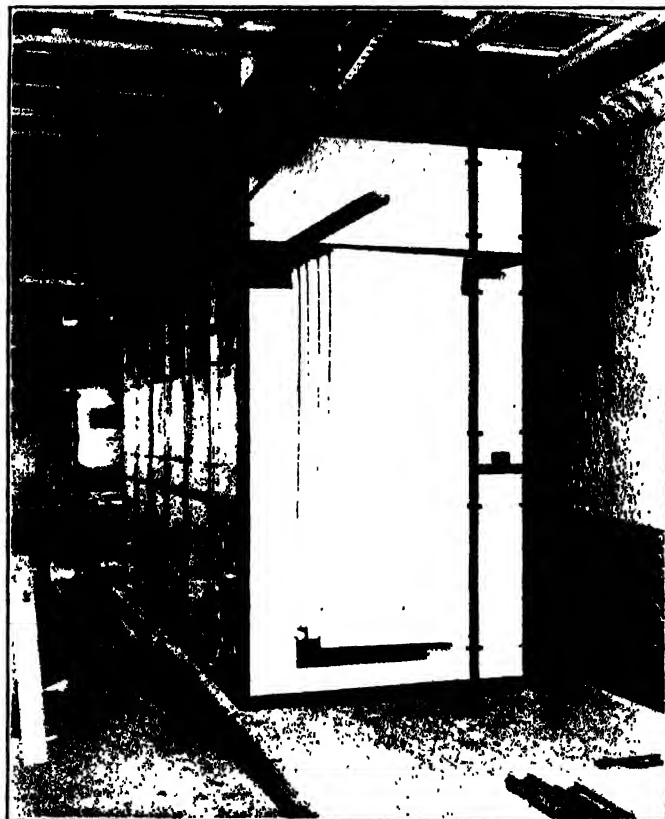
Principle of Grinnell Dryer

The fundamental principle in Grinnell Dryers is to complete the drying process by the slow movement of a very large volume of only moderately heated air. Many advantages of low temperature are thus secured with no advance in power or heating costs. The air is moved in a spiral motion by means of fans with special angle blades. These are made entirely of iron and steel, are accurately balanced and have dust proof bearings running in oil. Vibration is eliminated through the use of short fan shafts.

The material travels against the spirally moving air current, which is at a very moderate temperature when entering, and increases in temperature as it travels from fan to fan. (Each section has its own set of fans, heaters and temperature control.) This gives the greatest heat where the material is most moist and the least, where it is driest. In other words, a special arrangement of fans, baffle plates and heaters, preserves an even continuity of drying. The warm saturated air is exhausted at the end of the machine where the moist material enters.

Usually the air is blown with a spiral motion down over the paper. It is then taken through a port near the floor into the heater chamber located parallel to the drying compartment, but separated from it by means of a galvanized sheet metal baffle plate, then drawn vertically up through the heater and delivered by the next fan into a mixing chamber from which it passes down on to the paper again. Often in a large dryer, we reverse the air direction in the last sections. This is especially true with some classes of wall-paper which are quite wet. The saturated air is finally exhausted at the feed end of the dryer.

The same theory is applied to printed unground paper, ground or coated work only and printed ground work, except that different air velocities, volumes, drying time and temperatures are applied to



WALL-PAPER ELECTRICALLY HEATED

mend the most efficient and economically sized unit as well as absolutely guarantee its performance.

The physical and chemical characteristics of the wet and dried product are the primary factors in deciding on the proper type of drying equipment to install. The most efficient method of handling the product, the air temperatures, volumes, velocities and humidity are all dependent on this deciding factor. Unless one has wide experience with the nature and conditions of the product, or as a result of thorough and exhaustive laboratory tests, it is a waste of time to make any calculations or recommendations, until these are absolutely determined.

Mechanical Design

Then the mechanical design of the Grinnell Dryer is taken up.

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

each particular case. And this holds true for both the single and double deck machines, with paper having as high as a twelve color design, or the heaviest coating.

Special Features of Dryer

It is worthy of note that none of our warm saturated air is permitted to escape into the factory, but is exhausted directly from the dryer to outdoors. This makes working conditions far more favorable for your factory employees, making them more efficient.

The heating units may be operated by steam, gas or electricity. The latter is seldom used except where hydro-electric power is available at low rates, or where it is the only means at hand.

Our dryers are all built in sections, so that a single unit may at first be purchased and additions added at a later date. The dryers have rigid pressed steel frames, so designed that they can be dismantled and moved or lengthened out at some future time. Removable panels are inclosed by the framework, and can be removed

for cleaning purposes or in case internal parts have to be repaired. They are made of two thicknesses of galvanized sheet steel, having 1" corrugated air-cell asbestos between, making the most satisfactory insulation for this class of work. All baffle plates are made of galvanized steel of sufficient strength. The entire equipment is absolutely fireproof, meeting with the approval of the Fire Underwriters and whenever required, our machines are equipped with Grinnell Automatic Sprinklers, ready to connect up to the mill system.

Summary

The Grinnell Dryer as applied to the wall-paper, coated and printed paper industry has proven its worth. Its main advantages over the more antiquated methods of paper drying are an immense saving in floor space and drying time, a finished product of the highest quality, an immense saving in fuel and power and, last but not least, a betterment of working conditions for your mill employees.

"SCOTT" EVAPORATOR AS USED IN THE PULP MILL*

BY H. AUSTIN, OF ERNEST SCOTT & Co.

One of the most important departments of the modern pulp mill is the recovery house for handling the black spent liquors which come from the digesters. The evaporator, being the section which, in the recovery operation, first receives the weak black spent liquors as produced in the digesters, may therefore well receive first consideration.

Various schemes for taking these liquors and concentrating them to a degree at which they can be reduced to a molten ash in the incinerator have been suggested but their application is limited because they require special conditions, so that it is a well-recognized fact—except where these special conditions apply—that a vacuum evaporator for concentrating the digester spent liquors is a fundamental part of the recovery plant. For instance, the thermo compression system requires an unusually cheap source of power for doing the compression work and if that be not available the cost of compression is more than the cost of fuel for running a vacuum evaporator under ordinary mill conditions; also, to effect the evaporation solely in a direct heat evaporator requires an abnormally high strength digester spent liquor and much stronger than that produced by the ordinary pulp mill. With ordinary pulp mill liquors the carbonaceous matter contained therein is only sufficient to supply the necessary heat units for evaporating a small part of the water in which it is contained and large quantities of fuel wood must be burnt in the incinerator or in the smelting furnace, in order to provide sufficient heat units for evaporating the balance. Better practice, and that now used in most modern pulp mills where normal strength weak spent liquors appertain, is to pass the liquors through a vacuum evaporator and concentrate them to such an extent (usually about 20° Be.) that the direct heat evaporator, through which they are then passed, only has to evaporate such moisture as will enable the incinerating and smelting furnace to operate without the use of fuel wood. In other words, that the heat units from the carbonaceous matter in the concentrated liquor are then themselves sufficient to evaporate the relatively small amount of moisture left in the concentrated liquors.

These conditions make the subject of economical evaporation and recovery of the black liquors always of interest to pulp manufacturers and in the modern sense of the word means vacuum evaporation which uses the principle that water and other liquids boil at reduced temperatures under reduced pressures, thereby enabling the system of multiple effect evaporation to be employed and so permitting the water to be eliminated with a minimum fuel consumption. In multiple effect evaporators the equipment used consists of

two or more evaporators in which the steam generated in the evaporating effect is itself used for doing the evaporation in the succeeding evaporator effect. In deciding the number of effects to be used, whether it be double, triple, or quadruple effects, which are the favorite multiples used in this country, fuel consumption must always be an important factor because whether it be in the form of steam, gas, oil or coal, the pulp manufacturer wishes to do his recovery work with a minimum amount of fuel.

Designing the Evaporator

The first essential feature to be considered in designing a multiple effect evaporator is the temperature difference which can be obtained between the temperature of the initial steam which is to be utilized for evaporating purposes and the temperature at which the final concentrated liquid will boil under the vacuum which it is known can be obtained at the location where the pulp mill is situated. These are the primary factors which will decide the number of effects which can be used and yet at the same time secure an adequate commercial return on the plant investment, for that, of course, is always the final factor.

The temperature at which the finally concentrated liquid boils under a known vacuum is a non-variable figure and it therefore becomes the temperature, or pressure, of the initial steam which has to be used in the evaporator which enables the evaporator designer to vary the number of effects in order to obtain the best commercial return from the investment required for installing the evaporators. First of all should be considered whether there is any waste exhaust steam available which can be turned to the evaporation. If there is and there is sufficient of it then a single effect evaporator not only makes the cheapest installation but will also show the best commercial return. If there is insufficient exhaust steam to do the work in a single effect evaporator there may be enough to do the work in a double or triple effect, or it may be that by supplementing the exhaust steam by means of a little live steam direct from the boiler that the amalgamated amount of steam will then be sufficient to do the work in the higher multiple effect rather than ignore the exhaust steam altogether and thus have to furnish live steam for doing the whole of the work in an evaporator using a still higher number of effects, which would involve the expenditure of more money for equipment and, by reason of the work being done solely with live steam, would also involve more expensive operating costs. When using feed liquor having a temperature of about 150° F. in the evaporator in single effect evaporation a little less than one pound of water is evaporated by one pound of steam. In double effect about one and three-quarters pounds of evaporation is obtained per pound of steam, in triple

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

effect about two and five-eighths pounds of evaporation is obtained per pound of steam and in quadruple effect about three and one-half pounds of evaporation is effected per pound of steam. These are conservative figures and depend to some extent on the boiling points of the liquors being handled and the temperature at which they are fed to the evaporator because still greater economies may be obtained by preheating the black liquors which are fed to the evaporator. For this preheating the waste heat gases which pass the rotary and direct heat evaporator may be utilized with advantage.

Utilizing Exhaust Steam

Sufficient attention has not in the past been given to the question of using the exhaust steam for evaporation in mills which require steam both for power and evaporation. The power engineer is usually out to obtain all the power he can by means of expansion engines and condensing the steam and has had no sympathy for the evaporation department. Where, however, the dual operations of engine power and steam for evaporation appertain there is no doubt but that the steam should be taken from the power engine in the shape of exhaust, or low pressure, steam and furnished to the evaporator, because the low pressure steam will give but little return in the shape of power, as for instance if condensed in a condensing engine, but, because the latent heat units are those which are used for evaporating, it has at least ten times the value in heat units in a single effect evaporator and, of course, where two or more effects are used the value of this exhaust, or low pressure, steam for evaporation purposes as compared for power purposes in a condensing engine, is increased in proportion to the figures above stated. This fact is becoming increasingly appreciated and whereas a few years ago it was common practice for mills (which required power from engines and steam for evaporation) to be provided with a condensing engine and to supply the evaporator with direct steam, it is now the practice to have a non-condensing engine which delivers the exhaust to the evaporator and in some cases the non-condensing engine works against quite a little back pressure, as for instance 15-20 pounds. This naturally results in less expensive evaporator equipment (because the number of evaporator effects are usually less under these conditions) and considerably lower mill working costs when the two operations of power and evaporation are considered. Where the amount of power used can be made to balance with the evaporative work, or the number of evaporators in the multiple effect be made to balance the factory engine power, the combined fuel bill can be reduced to one-half compared with what it would be under the old conditions of using a condensing engine for the power and direct steam for working the evaporator.

Multiple Effect Evaporation

It should, moreover, not be assumed that in order to have the greatest general economy that it is necessary to install an evaporator having a high number of multiples. The whole question must be determined on the conditions appertaining at the mill where the evaporator is to be installed. An instance of this came to my notice a short time ago, in which a particular mill requires a large amount of hot water. It also has a fair amount of exhaust steam and the plant used is a triple effect, which, instead of utilizing the maximum vacuum obtainable on the last effect, works only with about 20" on the third effect so as to obtain the effluent water from the vacuum pump as hot as possible. It comes away from the pump at 160° F., which is the temperature at which hot water is required in other parts of the factory, though a large portion of it is also pumped through economizers for boiler feed purposes. That was the most economical method for that particular mill and reduced the aggregate fuel bill by 11 per cent as compared with the results formerly obtained by a quadruple effect working under the same steam conditions as the triple effect but with a higher vacuum, which resulted in cooler pump effluent water and thereby made more

fuel necessary for furnishing other points in the mill with the hot water that was required.

It has recently been suggested that seeing that multiple effect evaporation is dependent upon temperature difference why not use the weak liquor in the last effect and have the concentrated liquor come from evaporator to evaporator to meet the hotter steam so that the most concentrated liquor would be in the first effect which receives the hottest steam. The thought is that the more concentrated liquor has the higher boiling point and will, therefore, provide vapor of hotter temperature for evaporating, in the succeeding effects, the liquor having the lower boiling point and by this means to secure a greater economy. If fuel economy only is to be considered the idea is perfectly correct, but an evaporation problem is not only one of fuel economy but is also one where volume of evaporation per square foot of heating surface enters into the question in order to keep the size of the evaporator within such limits that a reasonable return on capital investment will be obtained. Take for instance a caustic soda liquor, which, in its weak state will evaporate at the rate of at least five pounds of water per square foot of heating surface per hour, but which when concentrated will evaporate at less than half that rate. It will be seen that if the more concentrated liquor is used in the first effect even though the evaporated vapor may have a few more heat units in it yet there will be so little volume of it per square foot of heating surface, that the evaporation of the weaker liquors in the succeeding effects will be very much retarded and the apparatus as a whole require to be of much larger size than if the weak liquor be used in the first effect and the stronger liquor in the later effects, as is the usual practice. The point is, that in order to get the maximum amount of work out of a given size of multiple effect evaporator one must not only have temperature difference but also volume of evaporation must be effected and the present system of using weak liquor in the first effect where the hottest steam is used results in the greater volume of evaporation per square foot of heating surface and therefore the smallest possible size of evaporator being required, and, consequently the lowest cost of installation so that the net return, which after all is the point being striven for, is greatest by the present method.

Improvements in Design

Up to a few years ago the type of evaporator in general use in this country was that using the heating tubes horizontally with the liquor outside the tubes and the steam inside. Such machines froth badly with foamy liquors and gather a scale on the tubes which is extremely difficult to remove, so that the Scott Company in supplying black liquor recovery plant—consisting of Rotary Incinerator and Causticizing equipment—were called upon to design and construct an evaporator which overcame the troubles encountered with the horizontal tube machine and so developed their vertical tube evaporator. This machine uses the liquor inside the tubes and steam outside and the results are so satisfactory that it is now extensively used both by pulp mills in this country and abroad. As a consequence of the principles on which this evaporator is designed it has marked freedom from frothing troubles and tube incrustation difficulties. The satisfaction thus obtained has resulted in most makers of evaporators offering vertical tube machines, but differing from the "Scott" machine in one important respect—the circulating tube area. In the "Scott" evaporator the heating, or downtake, area is distributed over the whole area of the evaporator, whereas other types use one large downtake situated in the center of the area of the evaporator, or else at one side of the machine. Now it is obvious that the liquor which has to be evaporated has to pass up the heating or uptake tubes before it can travel down the downtake area and by locating the downtake tube in the center, or alternatively to one side of the area of the evaporator, the liquors which come up the uptakes furthest away from the downtakes have also to travel over the liquors which

come from the uptakes which are nearer the downtake and in doing so are thereby baffled and hindered in their progress to the downtake with the result that there is very little circulation between the uptakes furthest away from the downtake and the evaporator boils with a rolling action. In the "Scott" machine the circulation of each nest of uptake, or heating, tubes is taken care of by its own downtake tube and the "Scott" evaporator boils in an entirely different manner by reason of the improved and regular, even circulation obtained.

The "Scott" Evaporator

In the "Scott" evaporator one obtains all the advantages of both the full, or submerged tube, type of evaporator as well as those of the "film" tube type of machine without the disadvantages of either. When starting to work the liquor is fed into the evaporator until it barely covers the top tube sheet. Then as the more heated liquor must rise to the top there is a movement upwards through the tubes and the liquor rises first in the smaller or uptake tubes, because as the volume of the liquor in same is so much less in proportion to that in the larger tubes it heats more quickly in the smaller, or uptake tubes. This movement is assisted by the formation of vapor formed from the evaporated moisture and that vapor, being lighter than the liquid from which it has been evaporated, rises in the tube and accumulates until its volume is such that it can carry the piston of liquid, which is in the tube above it, through the tube so that the liquid is impelled upwards in front of the vapor. During the interval that the vapor is passing upwards through the tube it is, of course, enveloped in a film, or envelope, of liquid which is itself nearer the heating surface than the evaporated vapor and thus results in a "film" effect evaporation being momentarily obtained while the vapor, with its envelope of liquor, is passing through the tube to the vapor separation space. The movement of the liquor through the tubes brakes up any natural tendency that the liquor may have to froth or foam, and, moreover, acts as a scouring agent to keep the tubes clean. Ample space in the top of the evaporator is provided for the separation of the vapor from the liquid. The vapor is, of course, many times the volume of the water from which it has been evaporated. The vapor passes off through the vapor outlet and the liquid passes to the downtake. In this way a very vigorous and true circulation of the liquor is obtained in the "Scott" evaporator without mechanical means.

Efficiency of the "Scott" Machine

From the fact that in the "Scott" evaporator the steam is used outside the tubes and the liquid which is to be evaporated is inside the tubes, it will be appreciated that the tubes are really immersed in a bath of steam so that as fast as the steam is used up more steam flows to the heating surface. In this way the heating surface is, therefore, in the best possible condition to do the maximum amount of work and to get a full supply of steam, which is a very different condition to that appertaining in evaporators, whether they be vertical or horizontal tubes, which use the steam inside the tubes because in that case—particularly when the liquors to be evaporated are cold and weak—the steam is frequently used up long before it reaches the end of the tube and in that event only part of the heating surface can be utilized. In the "Scott" machine, owing to the fact that the liquid to be evaporated is used inside the tubes, the latter can be easily brushed out and cleaned, whereas in machines where the steam is used inside the tubes and the liquid outside, any coating or deposit from the liquors is on the outside of the tubes and is not so easily gotten rid of.

In the case of tube replacement and renewal it is not necessary to dismantle the "Scott" machine but access to the tubes is obtained by the removal of two manhole covers, one below and one above the ends of the tubes, so that the replacement of any tube can be quickly performed.

Paper Firms at Direct Mail Ad. Convention

[FROM OUR REGULAR CORRESPONDENT]

CINCINNATI, Ohio, September 12, 1922.—Among the many features that will be seen at the forthcoming convention of the Direct Mail Advertising Association, to be held in Cincinnati, October 25 to 27, 1922, one of the most interesting and attractive will be the exhibits and demonstrations in the "Paper Colony." Many manufacturers and distributors of fine paper stock have already secured space.

The Seaman-Patrick Paper Company, Detroit, in conjunction with the Seaman Paper Company, Chicago, will have a very novel and unique display. A special-built booth will house their particular display and elaborate illuminating effects will be brought into play. The booth is to reproduce a room done in sixteenth century style, the fences to be built of beaver board and lined with a special fancy cover stock the Seaman companies are marketing.

The Hampshire Paper Company, South Hadley Falls, Mass., is planning to put on the best exhibit that has ever been known in the history of its organization. It has announced that a little vestpocket booklet, which won a prize for unique advertising at a previous D. M. A. A. convention, will be distributed to visitors at their exhibit in Cincinnati.

Probably one of the most expensive and most attractive exhibits will be that of the American Writing Paper Company, which company is planning to send a whole car of display material several hundred miles to this exposition. This includes the "baby" Four-drinier paper machine, which tips the scale at 500 pounds and only takes up the room of two library tables set lengthwise. Among other features of the exhibit will be actual demonstrations of every process of manufacture, such as sorting, boiling, bleaching and washing rags, parting the stock for the paper machine, sizing the paper to assure the proper printing surfaces, imprinting the watermark, drying the paper both on the machine and in the rough, application of "finishes," sorting, inspecting and packing the finished stock. There will also be a complete chemical laboratory as fully equipped as any paper laboratory in the world.

Every method of analyzing paper will be shown and carefully explained by chemists and expert paper makers from the company's mills at Holyoke.

Other paper manufacturers or distributors who have taken space, but who have not as yet disclosed the special features that will be included in their exhibits are the Dill & Collins Company, Philadelphia, Pa.; Beckett Paper Company, Hamilton, Ohio; Diem & Wing Paper Company, Cincinnati, Ohio; Miami Paper Company, West Carrollton, Ohio; Paper Makers' Club, Holyoke, Mass.; Strathmore Paper Company, Mittleague, Mass.; Whitaker Paper Company, Cincinnati, Ohio; Standard Paper Company, Cincinnati, Ohio; S. D. Warren Company, Boston, Mass., and Chatfield & Woods Paper Company, Cincinnati, Ohio.

Conditions in Pulp and Paper Industry

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 13, 1922.—The Department of Commerce has the following to say regarding paper and pulp industry in discussing fundamental business conditions:

"The production of news print declined about 5 per cent in July. Shipment from the mills and consumption by publishers each declined in about the same proportion as production. Stocks increased, particularly those in the hands of and in transit to publishers. The same was true of the production, shipments and consumption and stocks of wood pulp, both mechanical and chemical.

"The production of material for paper-box containers, both corrugated and solid fiber board, showed marked increases during the month of July.

This industry indicated the highest rate of activity for any month since the fall of 1920."

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

SUMMARY

Printing paper.....74 rolls, 109 cs.
Wrapping paper.....2,471 bls., 3,132 cs.
Blotting paper.....105 bls.
Cigarette paper.....710 cs.
Wall paper.....2,225 rolls, 7 cs., 4 bls.
Hangings.....16 bls.
Filter paper.....54 cs., 25 bls.
Tissue paper.....14 cs.
Packing paper.....1,074 rolls, 22 cs., 93 bls.
Glass paper.....23 cs.
Surface coated paper.....43 cs.
Photo paper.....12 cs.
Blue print paper.....38 rolls
Drawing paper.....64 cs.
Tracing paper.....12 cs.
Miscellaneous paper.....34 cs., 392 bls., 271 rolls

CIGARETTE PAPER

American Tobacco Company, Niagara, Bordeaux, 600 cs.
British-American Tobacco Company, Cedric, Liverpool, 74 cs.
British-American Tobacco Company, Laconia, Liverpool, 30 cs.
British-American Tobacco Company, Carmania, Liverpool, 5 cs.
British-American Tobacco Company, Adriatic, Liverpool, 5 cs.
Rose & Frank, La Touraine, Havre, 46 cs.

WALL PAPER

Wrigley & Co., Berengaria, Liverpool, 4 cs.
W. H. S. Lloyd & Co., Dakarian, London, 4 bls., 3 cs.
F. G. Prager Company, Finland, Antwerp, 2,225 rolls.

PAPER HANGINGS

A. C. Dodman, Jr., Company, Cedric, Liverpool, 13 bls.
A. C. Dodman, Jr., Company, Adriatic, Liverpool, 3 bls.

FILTER PAPER

Scientific Materials Company, President Roosevelt, Bremen, 1 case
J. Manheimer & Co., La Touraine, Havre, 53 cs.
A. Giese & Son, Niagara, Bordeaux, 25 bls.

TISSUE PAPER

Meadows, Wye & Co., Carmania, Liverpool, 5 cs.
C. A. Wyman Company, by same, 4 cs.
N. Schuetz & Co., M. Dollar, Genoa, 5 cs.

PACKING PAPER

Wilkinson Brothers & Co., Inc., Vandyck, Hamburg, 93 bls.
National Electric Conduit Company, Saxonia, Hamburg, 22 cs.
Republic Bag & Paper Company, Morristown, Hamburg, 1,074 rolls.

WRAPPING PAPER

First National Bank of Boston, Morristown, Hamburg, 473 bls.
Wilkinson Brothers & Co., Inc., Schodack, Rotterdam, 49 bls.
First National Bank of Boston, Manchuria, Hamburg, 1,185 bls., 517 rolls
L. Glickman & Co., Fred. VIII, Copenhagen, 1,067 rolls
Feinstrom Paper Company, Inc., Fred. VIII, Trondhjem, 20 rolls
E. C. Melby, by same, 214 rolls
First National Bank of Boston, Saxonia, Hamburg, 1,074 rolls, 1,724 bls.

BLOTTING PAPER

Somlo Company, Orluta, Hamburg, 105 bls.

PRINTING PAPER

E. C. Melby, Fred. VIII, Kristiania, 74 rolls.
P. C. Zuhlke, Finland, Antwerp, 12 cs.
B. F. Drakenfeld & Co., Laconia, Liverpool, 10 cs.
B. F. Drakenfeld & Co., Carmania, Liverpool, 32 cs.
Oxford University Press, by same, 6 cs.
Oxford University Press, Adriatic, Liverpool, 6 cs.
W. F. Ethrington Company, Assyria, Glasgow, 43 cs.

GLASS PAPER

J. L. N. Smythe Company, Mt. Clinton, Hamburg, 8 cs.
J. L. N. Smythe Company, Morristown, Hamburg, 15 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Finland, Antwerp, 43 cs.

PHOTO PAPER

Genear Company of America, Finland, Antwerp, 12 cs.

BLUE PRINT PAPER

Keuffel & Esser, Rugia, Hamburg, 38 rolls.

DRAWING PAPER

Keuffel & Esser, Rugia, Hamburg, 33 cs.
American Shipping Company, Manchuria, Hamburg, 31 cs.

TRACING PAPER

E. Dietzen & Co., Manchuria, Hamburg, 12 cs.

PAPER

M. G. Lange & Co., President Roosevelt, Bremen, 23 cs.
Atlantic Forwarding Company, La Touraine, Havre, 3 cs.
Roberts, Cushman & Co., Taormina, Genoa, 3 cs.
National City Bank, Orluta, Hamburg, 130 rolls.
Becker Paper Company, Africanic, Gothenburg, 385 bls.
Republic Bag and Paper Company, by same, 238 rolls.
D. V. Argumban, La Savoie, Havre, 7 bls.
Whiting & Patterson, by same, 5 cs.

RAGS, BAGGINGS, ETC

L. H. Abenheimer, Archimedes Manchester, 198 bls. baggings.
R. F. Downing & Co., by same, 125 bls. new cuttings.
Royal Manufacturing Company, by same, 370 bls. cotton waste.
Castle, Gotthel & Overton, by same, 188 bls. new cuttings.
Equitable Trust Company, by same, 110 bls. rags, 602 bls. paper stock.
E. J. Keller Company, Inc., Argus, Antwerp, 43 bls. rags.
E. J. Keller Company, Inc., Vandyck, Algiers, 375 bls. rags.
E. J. Keller Company, Inc., La Touraine, Havre, 116 bls. baggings.
Castle, Gotthel & Overton, La Touraine, Rouen, 109 bls. baggings, 4 bls. rags.
Equitable Trust Company, La Touraine, Havre, 485 bls. rags.
Castle, Gotthel & Overton, Bankdale, Barcelona, 181 bls. rags.
Castle, Gotthel & Overton, Silewe, Marseilles, 115 bls. new cuttings.
Katzenstein & Keene, Inc., President Polk, London, 36 bls. new cuttings, 199 bls. rags.
D. M. Hicks, Inc., Dakarian, London, 44 bls. waste paper.
International Acceptance Bank, Reliance, Hamburg, 20 bls. rags.
Goldman, Sachs & Co., by same, 36 bls. rags.
Waste Materials Trading Corp., Vechtdyk, Rotterdam, 132 bls. shoppies.
Waste Materials Trading Corp., by same, 213 bls. bagging.
American Woodpulp Corp., by same, 241 bls. rags.
E. J. Keller Co., Inc., by same, 491 bls. rags.
G. W. Miller & Co., by same, 88 bls. bagging.
Dexcar Trading Co., Wells City, Bristol, 581 bls. rags.
International Purchasing Co., Hudson, Havre, 21 bls. rags.
Chase National Bank, by same, 37 bls. rags.
Castle, Gotthel & Overton, by same, 113 bls. rags.
Equitable Trust Co., by same, 201 bls. rags.
E. Butterworth & Co., Inc., Westerdyk, Rotterdam, 120 bls. paper stock.
Royal Mfg. Co., by same, 34 bls. cotton waste.
Salomon Bros. & Co., Francisco, Hull, 37 bls. rags.
Mechanic & Metals National Bank, Verentia, London, 179 bls. rags.
Castle, Gotthel & Overton, by same, 80 bls. waste paper.
M. Wolfer, Calamates, Havana, 10 bls. rags.
American Woodpulp Corp., Schodack, Rotterdam, 305 bls. rags.
Castle, Gotthel & Overton, Morristown, Hamburg, 35 bls. rags.
National City Bank, by same, 99 bls. rags.
State Bank, by same, 218 bls. rags.
International Acceptance Bank, by same, 43 bls. rags.
Katzenstein & Keene, by same, 727 bls. rags.
Goldman, Sachs & Co., by same, 105 bls. rags.
Irving National Bank, by same, 15 bls. rags.

E. J. Keller Co., Inc., Morristown, Hamburg, 91 bls., baggings.
Chase National Bank, by same, 67 bls. rags.
Ladenburg, Thalman & Co., by same, 51 bls. rags.
J. H. Abenheimer, by same, 569 bls. rags.
F. P. Gaskell, by same, 4 bls. new cuttings.
Baring Bros. & Co., Laconia, Liverpool, 142 bls. thread waste.
Albion Trading Co., Pres. Garfield, London, 40 bls. rags.
American Express Co., by same, 28 bls. rags.
Katzenstein & Keene, Inc., Pioneer, Havre, 258 bls. rags.
Baring Bros. & Co., Cedric, Liverpool, 19 bls. thread waste.
Equitable Trust Co., by same, 112 bls. paper stock.
E. J. Keller Co., Inc., Mt. Clinton, Hamburg, 80 bls. rags.
Goldman, Sachs & Co., by same, 110 bls. rags.
Castle, Gotthel & Overton, by same, 146 bls. rags.
Castle, Gotthel & Overton, Imoke, Antwerp, 350 bls. baggings.
M. O'Meara Co., by same, 121 bls. baggings.
W. Barnett & Son, by same, 108 bls. rags.
E. J. Keller Co., Inc., by same, 41 bls. rags.
Castle, Gotthel & Overton, Niagara, Bordeaux, 76 bls. rags.
Castle, Gotthel & Overton, by same, 96 bls. new cuttings.
First National Bank of Boston, by same, 28 bls. rags.
Albion Trading Co., by same, 59 bls. rags.
W. Scholl & Co., by same, 602 bls. rags.
Albion Trading Co., Adriatic, Liverpool, 71 bls. rags.
G. M. Granes Co., Inc., by same, 113 bls. baggings.
Castle, Gotthel & Overton, La Touraine, Havre, 247 bls. rags.
P. Berlowitz, New Amsterdam, Rotterdam, 99 bls. rags.
American Woodpulp Corp., by same, 17 bls. baggings.
American Woodpulp Corp., by same, 276 bls. rags.
Royal Manufacturing Co., by same, 45 bls. cotton waste.
E. J. Keller Co., Inc., by same, 89 bls. rags.

OLD ROPE

International Purchasing Co., Argentina, Algiers, 109 coils.
Chemical National Bank, Pres. Roosevelt, Bremen, 73 bls.
Brown Bros. & Co., Vechtdyk, Rotterdam, 73 coils.
Brown Bros. & Co., Wells City, Bristol, 261 coils.
Brown Bros. & Co., Francisco, Hull, 414 coils.
E. J. Keller Co., Inc., by same, 125 coils.
S. Cohen, Calamates, Havana, 3 bls.
Brown Bros. & Co., Schodack, Rotterdam, 87 coils.
F. P. Gaskell, Manchuria, Hamburg, 10 bls.
M. Wolfer, Pastores, Havana, 4 bls.
R. Scrutino, Sanea, Santiago, 12 bls.

CHINA CLAY

Fughish China Clay Sales Corp., Wells City, Bristol, 100 casks.

CASEIN

National City Bank, Canadian Seigneur, Melbourne, 4,000 bags.
Atterbury Bros., Southern Cross, Buenos Aires, 167 bags.
Kallbrensch Corp., by same, 1,384 bags.
A. Klipstein & Co., La Lorraine, Havre, 50 bags.

WOOD FLOUR

A. Kramer & Co., Inc., Orduña, Hamburg, 250 bags.
A. Kramer & Co., Inc., Orluta, Hamburg, 249 bags.

WOOD PULP

H. Hollesen, Inc., Pres. Roosevelt, Bremen, 2,324 bls., 464 tons.
M. Gottesman & Co., Inc., Orluta, Hamburg, 771 bls.
Seggerman Bros., Fred. VIII, Gothenburg, 200 bls., 25 tons.
Brown Bros. & Co., Inc., Africanic, Gothenburg, 2,750 bls., 556 tons.
Scandinavian-American Trading Co., by same, 180 bls., 30 tons.
E. M. Sergeant & Co., by same, 600 bls., 100 tons.
A. J. Page, Inc., by same, 1,800 bls., 300 tons.

(Continued on page 72)

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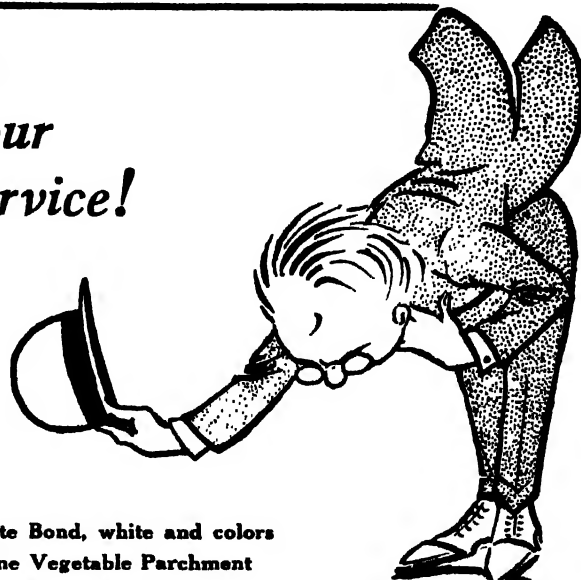
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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, SEPTEMBER 13, 1922.

After a five months' strike, more than 100,000 anthracite workers resumed work Monday of this week. The first train load of coal mined in 163 days started on its journey Monday night from the big Truesdale mine at Nanticoke, Pa. The coal strike has been broken at last.

Last minute press dispatches state that the shop strike on 52 roads is likely to end this week. If this truce is consummated it will mean that the first step has been taken toward a nation-wide return to work. It would mean a cessation of the rail tieup.

With these two fundamental obstacles cleared away, paper manufacturers may well look forward to a long period of clear sailing. Economic conditions are such as to warrant an almost unprecedented volume of business this fall and winter. The demand for paper is ever increasing from all quarters and this is accompanied by substantial price increases. The boom in the paper industry has merely been retarded by the national strikes.

The substantial activity in practically every line of business, accompanied by a strengthening in the primary markets has given rise to an enormous volume of advertising with a consequent enhancement in the consumption of all grades of paper. Manufacturers in a few lines have withdrawn quotations owing to the hazardous fuel and transportation conditions, but now that these impediments to normal progress are rapidly disappearing, paper prices will, undoubtedly, settle at a firm level that will admit of a fair profit to all connected with the industry.

To be convinced of the enormous increase in the consumption of news print paper it is only necessary to examine the current editions of the New York dailies. Advertisers are filling column after column and page after page with descriptions of their products in confident anticipation of the business boom that will come this fall. The consumption of news print paper in the United States is now going on at the rate of 2,200,000 tons per year—the highest ever known in the history of the industry. The market is strengthening each week. New orders for contract shipment are being taken by several of the larger producers at \$80 per ton, and prices are expected to go above this during the last quarter of this year.

In book paper circles, although prices continue withdrawn, an enormous demand still prevails. Not only is the circulation of nearly every magazine and periodical in the country constantly increasing, but publishers are printing more advertising and text matter. The sale of hundreds of thousands of school books over the country with the reopening of school has, in itself, made a considerable dent in the stocks of booksellers. Export demand for book paper continues on the rise and both merchants and manufacturers are looking forward to the best season the business has enjoyed in years.

Fine paper quotations are still being made on a daily basis and most manufacturers have canceled all existing price lists or weekly quotation sheets owing to the unsettled conditions which have centered around the coal and rail situations. Mills are, however, deluged with orders, and manufacturers are not inclined to believe this is due to an artificial strike demand. Consumers of writing paper are already negotiating for their holiday supplies, and the prospects are that the remaining fall and winter months should be characterized by a goodly volume of business in this field.

Probably more than any branch of the industry, the tissue trade is suffering from the effects of the coal shortage. New York clothing houses are clamoring for tissue stocks to tide them over their fall business, but dealers, who, for the most part failed to stock up in time, are unable to meet their customers' demands. Tissue mills are running as close to capacity as their fuel supplies will let them, but with the announcement of a coal settlement this branch of the industry is expected to get squarely on its feet in the near future.

The rising cost of raw materials is causing many wrapping paper manufacturers to take orders contingent upon their ability to produce. Kraft wrappings are exceedingly active and a healthy volume of business attaches to most of the other grades. The general tone of the market is strengthening and prices are going up almost inevitably due to the combination of a top-heavy demand, scanty available stocks, high-priced raw materials and the coal and rail tieups.

Board manufacturers, the first to withdraw price quotations, are still quoting day-by-day. The demand for all kinds of board is only equalled by that which followed close on the heels of the war. The *Harvard Economic Service*, of September 9, states that general business conditions favor advances in paper board prices. In that light, the current advances, under cover of price withdrawals, are not precipitated merely by the industrial tieups, although these factors have, undoubtedly, a large influence.

Mechanical Pulp

Ground wood prices have not altered during the past week, but dealers feel that substantial price increases will take place in the near future, corresponding with the boosts which have occurred in practically every phase of the paper business. Activity has been regular and the demands from news print mills have been exceptionally heavy. With the consummation of the coal and rail strikes, mechanical pulp producers feel that a steady volume of business at profitable prices should accrue to them.

Chemical Pulp

The chemical pulp market is decidedly firm and a perceptible stiffening has been taking place among the lower grades. Regular quantities of bleached sulphite have been moving into consuming channels and the demand for nearly all grades has continued on the increase. In a few cases upward price revisions were noted during the past week.

Old Rope and Bagging

No price increase was noted in the old rope market of the past week although there has been a substantial picking up in demand. No. 1 domestic manila rope has been in good demand at prices up to 6.25, f. o. b. New York, while the demand for the different grades of old strings has eased up a bit during the week. Scrap bagging has been easy, roofing bagging being practically the only bright spot in this market. Roofing is still holding in the neighborhood of 90c to \$1.00 per hundred pounds and roofing felt mills are taking all they can get at this figure.

Waste Paper

Waste paper is still moving at a tremendous rate, and prices even higher than those already reached are expected within the next week or two. It appears as though the very volume of business which is accruing to mills is sufficient in itself to warrant their paying the exceptionally high prices for waste paper. The demand for raw materials is on the increase, and the board industry, especially, is requiring steady quantities of such grades as waste news and mixed paper.

Rags

All grades of rags have continued in active demand and prices have been strengthening week by week. The market is in a decidedly firm condition. Roofing felt manufacturers have contracted with importers for their advance shipments, but the drastic price advances abroad have tended to slow down the purchase of foreign rags. New cotton cuttings have been in steady, heavy demand and packers deny the existence of any spot accumulations.

Twine

The past week in the twine market has been marked by steady prices and a demand which is ever strengthening. The low stocks in the hands of dealers are expected to be wiped out within the next week or two and a subsequent era of stocking up follow at considerably higher prices due to the raw material increases.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations September 12, 1922:

	BID.	ASKED
American Writing Paper Company, pref.....	32 1/4	32 3/4
International Paper Company, com.....	61 1/4	61 3/4
International Paper Company, pref., stamped.....	79 1/4	80 1/4
Union Bag & Paper Corporation.....	77 1/4	77 3/4

Paper

F. o. b. Mill.

Ledgers.....		
Bonds.....		
Writings.....	All quotations withdrawn	
Extra Superfine.....		
Superfine.....		
Tub Sized.....		
Engine Sized.....		
News—f. o. b. Mill.....		
Rolls, contract.....	3.75 @ 4.00	
Rolls, transit.....	4.00 @ —	
Sheets.....	4.00 @ —	
Side Run.....	3.25 @ 3.50	
Book, Case—f. o. b. Mill.....		
S. & S. C.....		
M. F.....	All quotations withdrawn	
Coated and Enamel.....		
Lithograph.....		
Tissues—f. o. b. Mill.....		
White, No. 1.....	All quotations withdrawn	
Colored.....		
Anti-Tarnish.....		
Silver Tissue.....		
Manila.....		
Kraft—f. o. b. Mill.....		
No. 1 Domestic.....	7.00 @ 7.50	
No. 2 Domestic.....	5.50 @ 6.25	
Imported.....	6.00 @ 6.25	
Screenings.....	2.75 @ 3.50	
Manila.....		
No. 1 Jute.....	8.50 @ 9.00	
No. 2 Jute.....	7.75 @ 8.50	
No. 1 Wood.....	4.50 @ 5.50	
No. 2 Wood.....	4.00 @ 4.50	
Butchers.....	4.25 @ 4.75	
Fiber Papers.....		
No. 1 Fiber.....	6.00 @ 6.25	
No. 2 Fiber.....	5.00 @ 5.25	
Common Bogus.....	2.50 @ —	
Card Middies.....	4.00 @ 5.00	
Boards—per ton.....		
News.....		
Straw.....		
Chip.....		
Binders Board.....	All quotations withdrawn	
Bel. Mla. Ll. Chip.....		
Wood Pulp.....		
Container.....		
Wax Paper.....		
Self Sealing White.....		
28 and 30 lb.....		
basis.....	10.00 @ 11.00	
Waxed Tissue.....	1.40 @ 1.60	
Glassine.....		
Bleached, basis 25.....	All quotations withdrawn	
1 lb.....		
Bleached, basis 20.....		
1 lb.....		

Mechanical Pulp

(Ex-Doek.)

No. 1 Imported.....	32.00 @ 36.00
No. 1 Domestic.....	28.00 @ 32.00
(F. o. b. Pulp Mills.)	

Chemical Pulp

(Ex-Doek, Atlantic Ports.)

Sulphite (Imported).....		
Bleached.....	4.30 @ 4.50	
Easy Bleaching.....	2.85 @ 3.10	
No. 1 strong unbleached.....	2.50 @ 2.75	
No. 2 Strong unbleached.....	2.25 @ 2.50	
No. 1 Kraft.....	2.70 @ 3.00	
Sulphite.....		
Bleached.....	1.90 @ 4.00	
(F. o. b. Pulp Mill.)		
Sulphite (Domestic).....		
Bleached.....	4.25 @ 4.50	
Strong unbleached.....	2.60 @ 2.80	
Easy Bleaching.....		
Sulphite.....	2.70 @ 3.10	
News Sulphite.....	2.50 @ 2.80	
Mitcherlich.....	2.75 @ 3.05	
* Kraft (Domestic).....	2.65 @ 3.00	
Soda Bleached.....	4.00 @ 4.50	

Domestic Rags

New Prices to Mill, f. o. b. N. Y.

Shirt Cuttings.....		
New White, No. 1.....	11.25 @ 11.75	
New White, No. 2.....	6.50 @ 7.00	
Silesias, No. 1.....	6.25 @ 6.75	
New Unbleached.....	9.00 @ 9.50	
Washables.....	4.00 @ 4.25	
Fancy.....	5.00 @ 5.50	
Cotton—according to Grades.....		
Blue Overall.....	6.00 @ 6.25	
New Blue.....	4.75 @ 5.00	
New Black Soft.....	5.50 @ 6.00	
New Light Sec.....		
Onds.....	2.75 @ 3.00	
O. D. Khaki Cuttings.....	3.75 @ 4.25	
Men's Corduroy.....	2.75 @ 3.00	
New Canvas.....	7.00 @ 7.25	
New Black Mixed.....	2.50 @ 2.75	
Old.....		
White, No. 1.....		
Repacked.....	6.50 @ 6.75	
Miscellaneous.....	5.50 @ 6.00	
White, No. 2.....		
Repacked.....	3.25 @ 3.50	
Miscellaneous.....	2.75 @ 3.00	
St. Soiled White.....	1.65 @ 1.75	
Thirds and Blues.....		
Repacked.....	1.75 @ 1.85	
Miscellaneous.....	1.45 @ 1.55	
Black stockings.....	2.90 @ 3.25	
Rooting rags.....		
Cloth Strippings.....	1.25 @ 1.35	
No. 1.....	1.25 @ 1.35	
No. 2.....	1.20 @ 1.25	
No. 3.....	.85 @ .95	
No. 4.....	.85 @ .95	
No. 5A.....	1.00 @ 1.10	

Foreign Rags

New Light Silesias.....	6.00 nominal
Light Flannelettes.....	6.75 nominal
Unbleached Cottons.....	7.50 nominal
New White Cuttings.....	9.50 nominal
New Light Oxforde.....	6.00 nominal
New Light Prints.....	4.50 nominal
New Mixed Cuttings.....	2.00 @ 2.50
New Dark Cuttings.....	1.90 @ 2.10
No. 1 White Linens.....	9.00 @ 11.00
No. 2 White Linens.....	6.50 nominal
No. 3 White Linens.....	5.00 nominal
No. 4 White Linens.....	3.50 nominal
Old Extra Light Prints.....	2.00 nominal
Ord. Light Prints.....	1.75 nominal
Med. Light Prints.....	1.50 nominal
Dutch Blue Cottons.....	1.85 nominal
German Blue Cottons.....	1.50 nominal
Ger. Blue Linens.....	3.50 nominal
Checks and Blues.....	1.50 nominal
Dark Cottons.....	1.20 @ 1.30
Shoppery.....	1.00 @ 1.05
French Blues.....	1.75 @ 2.00

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1.....		
Foreign.....	1.00 @ 1.10	
Domestic.....	1.00 @ 1.10	
Wool, Tares, light.....	1.45 @ 1.55	
Bright Bagging.....	1.10 @ 1.25	
No. 1 Scrap.....	1.00 @ 1.15	
Sound Bagging.....	.85 @ .95	
Manila Rope.....		
Foreign.....	5.75 @ 6.25	
Domestic.....	6.25 @ 6.50	
New Bu. Cut.....	2.25 @ 2.45	
Hessian Jute Threads.....		
Foreign.....	2.25 @ 2.50	
Domestic.....	2.20 @ 2.40	
Mixed Strings.....	.90 @ 1.00	

Twines

Cotton—(F. o. b. Mill).....		
No. 1.....	.35 @ .37	
No. 2.....	.31 @ .33	
No. 3.....	.27 @ .29	

India, No. 6 basis.....	.20 @ .21	
Light.....	.19 @ .20	
Dark.....	.41 @ .42	
B. C., 18 Basis.....		
A. B. Italian, 18 Basis.....	.51 @ .61	
Finished Jute.....		
Light, 18 basis.....	.26 @ .27	
Dark, 18 basis.....	.29 @ .30	
Jute Wrapping, 3-6 Ply.....		
No. 1.....	.23 @ .24	
No. 2.....	.21 @ .22	
Tube Rope.....		
4-ply and larger.....	.15 @ .17	
Fine Tube Yarn.....		
5-ply and larger.....	.19 @ .21	
4-ply.....	.20 @ .22	
3-ply.....	.20 @ .22	
Unfinished India.....		
Basis.....	.16 @ .17	
Paper Makers Twine.....		
Balls.....	.13 @ .15	
Box Twine, 2-3 ply.....	.18 @ .19	
Jute Rope.....	.21 @ .24	
Amer. Hemp, 6.....	.33 @ .35	
Sisal Hay Rope.....		
No. 1 Basis.....	.15 @ .17	
No. 2 Basis.....	.13 @ .15	
Sisal Lath Yarn.....		
No. 1.....	.14 @ .15	
No. 2.....	.11 @ .13	
Manila Rope.....	.18 @ .19	

Old Waste Papers

(F. o. b. New York)

Shavings.....		
Hard, White, No. 1.....	4.00 @ 4.25	
Hard, White, No. 2.....	3.65 @ 3.90	
Soft, White, No. 1.....	3.60 @ 3.80	
Flat Stock.....		
Stitchless.....	2.00 @ 2.15	
Over Issue Mag.....	2.60 @ 2.70	
Solid Flat Book.....	1.85 @ 2.00	
Crumpled No. 1.....	1.70 @ 2.00	
Solid Book Ledger.....	2.70 @ 2.85	
Ledger Stock.....	1.90 @ 2.00	
New B. B. Chips.....	.65 @ .70	
Manilas.....		
New Env. Cut.....	2.50 @ 2.75	
New Cut No. 1.....	1.90 @ 2.00	
Extra No. 1, Old.....	1.55 @ 1.65	
Print.....	1.05 @ 1.15	
Container Board.....	.90 @ 1.10	
Bogus Wrapper.....	1.05 @ 1.15	
Old Krafts, machine compressed.....		
Bales.....	1.85 @ 1.95	
News.....		
No. 1 White News.....	1.80 @ 1.95	
Strictly Overissue.....	1.20 @ 1.30	
Strictly Folded.....	1.10 @ 1.15	
No. 1 Mixed Paper.....	.90 @ .95	
Common Paper.....	.55 @ .60	

CHICAGO

[FROM OUR REGULAR CORRESPONDENT.]

Paper.....		
F. o. b. Mill.....		
All Rag Bond.....		
No. 1 Rag Bond.....		
No. 2 Rag Bond.....		
Water Marked Sulphite.....		
Sulphite Bond.....		
Sulphite Ledger.....		
Superfine Writing.....		
No. 1 Fine Writing.....		
No. 2 Fine Writing.....		
No. 3 Fine Writing.....		
No. 1 M. F. Book.....		
No. 1 S. & S. C. Book.....		
Coated Book.....		
Coated Label.....		
News—Rolls, mill.....	3 1/4 @ 4 1/4	
News—Sheets, mill.....	3 1/4 @ 4 1/4	
No. 1 Manila.....	5 1/2 @ 6	
No. 1 Fiber.....	5 @ 5 1/2	
No. 2 Manila.....	4 1/2 @ 5	
Butchers' Manila.....	4 @ 5	
No. 1 Kraft.....	7 @ 7 1/2	
No. 2 Kraft.....	6 @ 6 1/2	
Wood Tag Boards.....	4 @ —	
Screenings.....	2 1/2 @ —	
Boards, per ton.....		
Plain Chip.....		
Solid News.....		
Manila Lined.....		
Chip.....		
Container Line.....		
85 Test.....		
100 Test.....		
Old Papers.....		
Shavings.....		
No. 1 Hard White.....	4.50 @ 4.75	
No. 1 Soft Shav.....	3.75 @ 4.00	
No. 1 Mixed.....	2.10 @ 2.30	
No. 2 Mixed.....	1.75 @ 1.90	
White Envel. Cuttings.....	4.50 @ 4.75	
Ledgers and Writings.....	2.65 @ 2.75	
Solid Books.....	2.55 @ 2.65	
No. 1 Books, light.....	2.40 @ 2.50	
Blanks.....	2.00 @ 2.25	
Ex. No. 1 Manila.....	2.40 @ 2.60	
Manila Envelope Cuttings.....	2.40 @ 2.60	
No. 1 Manilas.....	1.75 @ 2.00	
Folders News (over issue).....	1.40 @ 1.50	
Old Newspaper.....	1.35 @ 1.45	
Mixed Papers.....	1.25 @ 1.50	
Straw Clippings.....	1.25 @ 1.50	
Binders Clippings.....	1.25 @ 1.50	
Kraft.....	2.40 @ 2.60	
New Kraft Cuts.....	2.50 @ 2.75	
Roofing Stock, f.o.b. Chicago, Net Cash.....		
No. 1.....	33.00 @ —	
No. 2.....	31.00 @ —	
No. 3.....	29.00 @ —	
No. 4.....	29.00 @ —	

PHILADELPHIA

[FROM OUR REGULAR CORRESPONDENT.]

Paper.....		
Bonds.....	.10 @ .40	
Ledgers.....	.15 @ .40	
Writings.....		
Superfine.....	.15 @ .20	
Extra fine.....	.12 @ .22	
Fine.....	.20 @ .30	
Fine, No. 2.....	.20 @ .25	
Fine, No. 3.....	.15 @ .20	
Book, M. F.....	.06 @ .09	
Book, S. S. & C.....	.08 @ .15	
Book, Coated.....	.08 @ .15	
Coated Lithograph.....	.10 @ .15	
Label.....	.08 @ .15	
News.....	.05 @ .07	
No. 1 Jute Manila.....	.12 @ .13	
Manila Sul., No. 1.....	.08 @ .08 1/2	
Manila No. 2.....	.07 1/4 @ .08	
No. 2 Kraft.....	— @ .08 1/2	
No. 1 Kraft.....	— @ .09 1/2	
Common Bogus.....	.02 1/4 @ .03	
Straw Board.....		
News Board.....		
Chip Board.....		
Wood Pulp Board.....		
(Carload Lots).....		
Binder Boards.....		
Per ton.....		
Carload lots.....		
Tarred Felts.....		
Regular.....	48.00 @ 50.00	
Slabers.....	54.00 @ 56.00	
Old Papers.....		
Shavings.....		
No. 1, Hard.....	4.00 @ 4.25	
No. 2, Hard.....	3.50 @ 3.75	
No. 1 Soft White.....	3.60 @ 3.75	
No. 2 Soft White.....	2.00 @ 2.25	
No. 1 Mixed.....	1.50 @ 1.75	
No. 2 Mixed.....	1.00 @ 1.25	

(Continued on page 74)

Imports and Exports of Paper and Paper Stock

(Continued from page 68)

R. F. Hammond, Stockholm, Gothenburg, 750 bls., 150 tons.
American Wood Pulp Corp., Manchuria, Hamburg, 3,200 bls.
Tidewater Paper Mill Co., C. F. Gordon, Liverpool, N. S., 7,460 bls.
Tidewater Paper Mill Co., Nova Queen, Liverpool, 8,257 bls.
Tidewater Paper Mill Co., Barnholm, Murray Bay, 1,142 tons bulk.
Tidewater Papermills Co., Minas Prince, Liverpool, N. S., 8,887 bales.
Kelly & Co., Inc., Truro Queen, Pt. Medway, N. S., 4,030 bales.
J. Andersen & Co., Noreford, Porsgrund, 600 bales.
Equitable Trust Co., Storaker, Trondhjem, 1,200 bales, 200 tons.
Wilson Lyon & Co., Inc., Storaker, Trondhjem, 150 bales, 25 tons.

CLEVELAND IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

S. Silberman, Vechtdyk, Rotterdam, 112 bls. rags.
S. Silberman, Vechtdyk, Rotterdam, 236 bls. shoppies.
S. Silberman, Westerdyk, Rotterdam, 192 bls. rags.
S. Silberman, N. Amsterdam, Rotterdam, 52 bls. shoppies.

TORONTO IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

E. C. Melby, Noreford, Bergen, 165 rolls wrapping paper.

MONTREAL IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

Katzenstein Keene, Inc., Canadian Challenger, Antwerp, 879 bls. rags.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

E. J. Keller Co., Inc., Elzasier, Antwerp, 63 bls. rags.
E. J. Keller Co., Inc., Blydendyk, Rotterdam, 242 bls. rags.
E. J. Keller Co., Inc., Manchester Exchange, Manchester, 220 bls. rags.
E. J. Keller Co., Inc., Argus, Antwerp, 419 bls. rags.
E. J. Keller Co., Inc., W. Eldara, Havre, 360 bls. rags.
Katzenstein & Keene, Inc., Blydendyk, Rotterdam, 223 bls. rags.
Katzenstein & Keene, Inc., P. Izet, Havre, 414 bls. rags.
Katzenstein & Keene, Inc., Han. Court, Nantes, 880 bls. rags.

Castle, Gottheil & Overton, Naperian, Antwerp, 768 bls. rags and 542.
Castle, Gottheil & Overton, Manhattan, Hamburg, 631 bls. rags.
Castle, Gottheil & Overton, Blydendyk, Amsterdam, 316 bls. rags.
Castle, Gottheil & Overton, Argus, Antwerp, 146 bls. rags.
Castle, Gottheil & Overton, Manhattan, Bremen, 110 bls. rags.
Castle, Gottheil & Overton, Manchester Exchange, Manchester, 302 bls. new cuttings.
Castle, Gottheil & Overton, Blydendyk, Rotterdam, 712 bls. rags.
Castle, Gottheil & Overton, Northwestern Miller, London, 201 bls. waste paper.
Dill & Collins, by same, 276 bls. waste paper.
J. Lang Paper Co., Morristown, Hamburg, 65 bls. rags.
L. H. Abenheimer, by same, 209 bls. rags.
Katzenstein & Keene, Inc., by same, 76 bls. rags.
Ladenburg, Walman & Co., by same, 187 bls. rags.
Salomon Bros. & Co., by same, 79 bls. rags.
M. O'Meara Co., by same, 62 bls. rags.
Mechanics & Metals Nat'l Bank, by same, 335 bls. rags.
Int'l Acceptance Bank, by same, 194 bls. rags.
Coal & Iron Nat'l Bank, by same, 77 bls. rags.
Katzenstein & Keene, Inc., Innoko, Antwerp, 384 bls. rags.
E. J. Keller Co., Inc., by same, 156 bls. rags.
Corn Exchange Nat'l Bank, by same, 307 bls. rags.
S. Silberman, by same, 299 bls. rags.
S. Datz & Sons, by same, 156 reels, 10 cs. paper.
Perkins, Goodwin & Co., Taormina, Genoa, 18 cs. printing paper.
Castle, Gottheil & Overton, Hamburg, 955 bls. wood pulp.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

R. F. Hammond, Noreford, Gothenburg, 750 bls. wood pulp, 150 tons.
Castle, Gottheil & Overton, C. of Flint, Hamburg, 815 bls. woodpulp.
Brown Bros. & Co., Africane, Stugsund, 2,000 bls. wood pulp, 406 tons.
American Woodpulp Corp., Africane, Svartnik, 250 bls. wood pulp, 152 tons.
Scandinavian Amer. Trading Co., by same, 2,400 bls. wood pulp, 406 tons.
Scandinavian Amer. Trading Co., Africane, Ntamp, 2,310 bls. wood pulp, 385 tons.
E. M. Seigant & Co., by same, 300 bls. wood pulp, 50 tons.
J. Andersen & Co., Africane, Svans, 150 bls. wood pulp, 25 tons.
A. J. Pagel & Co., Inc., by same, 2,850 bls. wood pulp, 481 tons.
A. J. Pagel & Co., Inc., Africane, Domsjo, 4,200 bls. wood pulp, 711 tons.
A. J. Pagel & Co., Inc., Africane, Gefic, 2,000 bls. wood pulp, 254 tons.
Scandinavian Amer. Trading Co., Africane, Gothenburg, 1,088 bls. wood pulp, 158 tons.
Johannesson, Wales & Spaire, Inc., by same, 254 bls. wood pulp, 50 tons.
Nilsen, Lyon & Co., Inc., by same, 254 bls. wood pulp, 25 tons.
C. K. MacAlpine, by same, 110 bls. paper.

C. K. MacAlpine, Africane, Gothenburg, 1,004 reels paper.
Katzenstein & Keene, Inc., Nitonian, Liverpool, 93 bls. new cuttings.
Katzenstein & Keene, Inc., Vechtdyk, Rotterdam, 43 bls. rags.
E. Butterworth & Co., by same, 47 bls. paper stock.
E. J. Keller Co., Inc., by same, 115 bls. rags.
Castle, Gottheil & Overton, Naperian, Antwerp, 45 bls. rags.
J. B. Moors & Co., Dakarian, London, 16 bls. cuttings.
1st Nat'l Bank of Boston, by same, 257 bls. rags.
Bird & Son, by same, 112 bls. rags.
Bird & Son, by same, 50 bls. waste paper.
American Express Co., by same, 98 bls. waste paper.
Crocker, Burbank Co., by same, 170 bls. waste paper.
G. W. Wheelwright Paper Co., by same, 111 bls. waste paper.
Baring Bros & Co., by same, 28 bls. waste paper.
Old Colony Trust Co., by same, 240 coils, 28 bls. old rope.
Hollingsworth, Vose & Co., by same, 107 coils, 14 bls. old rope.
Brown Bros. & Co., by same, 605 coils, 70 bls. old rope.

CHARLESTON IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

E. J. Keller Co., Inc., Flour Spar, Antwerp, 704 bls. bagging.
E. J. Keller Co., Inc., Coldwater, Antwerp, 300 bls. bagging.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

E. J. Keller Co., Inc., Coldbrook, Antwerp, 597 bls. rags.
E. J. Keller Co., Inc., Governor, Liverpool, 155 bls. bagging.
E. J. Keller Co., Inc., Dorington Court, Havre, 62 bls. bagging.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 9, 1922

R. F. Hammond, Winnebago, Gothenburg, 2,000 bls. wood pulp, 400 tons.
Castle, Gottheil & Overton, Blydendyk, Amsterdam, 226 bls. rags.
Castle, Gottheil & Overton, Naperian, Antwerp, 211 bls. rags.
Katzenstein & Keene, Inc., Capulin, London, 100 bls. rags.
Katzenstein & Keene, Inc., by same, 128 bls. bagging.
E. J. Keller Co., Inc., Homestead, Antwerp, 177 bls. bagging.
E. J. Keller Co., Inc., by same, 2,180 bls. rags.
E. J. Keller Co., Inc., C. of Flint, Hamburg, 304 bls. rags.
Wood Pulp Trading Co., Ltd., Sagoland, Iggesund, 3,450 bls. wood pulp.

Orono Paper Co. Suit on Pulpwood Contract

[FROM OUR REGULAR CORRESPONDENT]

BANGOR, Me., September 11, 1922.—An important suit was entered for trial in the Penobscot County Superior Court last week, action being brought by the Patton-Gulhaue Company of Bangor against the Orono Pulp and Paper Company, whose offices are in Bangor and mill at Basin Mills. In this action the sum of \$121,253.23 is claimed as balance due on a contract for pulpwood, the itemized statement being somewhat lengthy. B. F. Maher, of Augusta, appears as attorney for the plaintiff company.

Resigns From Nekonegan Corp.

[FROM OUR REGULAR CORRESPONDENT]

OLD TOWN, Me., September 11, 1922.—Ralph C. Kitchen has resigned as paymaster and clerk of the Nekonegan Paper Corporation of Old Town to accept a position with George W. Barnjum. His new headquarters will be at Annapolis Royal, Nova Scotia, and he will take up his new duties about September 20.

Mr Kitchen is exalted ruler of the local Elks, is prominent in Democratic political circles and is very popular with many Old Town friends.

The **B** *Quality: It means more than price*
PULPS
INC

"Hafslund Bear" **"Forshaga"**
 BLEACHED SULPHITE

"Klarafors"
 EASY BLEACHING SULPHITE

STRONG UNBLEACHED SULPHITE

"Hurum" **"Bamle"**
 EXTRA STRONG KRAFT; BLEACHED AND
 BLEACHABLE SULPHATE

"Edsvalla" 50% MOIST **"Dejefors"** DRY
 WHITE SPRUCE—GROUND WOOD

Tonnage available on dock for prompt shipment

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Clay
 300 Tons daily

Over forty years experience in the clay industry has naturally resulted in the adoption of the most scientific methods and practices.

This record of achievement is your guaranty of *clay* of absolute uniformity at prices consistent with M-E quality and service.

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PULP AND PAPER

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Seamless felts for fast running.
 satin Style felts for finish.
 special felts to meet every condition.
 send us your felt problems.

KNOX WOOLEN COMPANY
 CAMDEN, MAINE

SOLD BY
BULKLEY, DUNTON & COMPANY
 75-77 Duane St., N. Y., and direct

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, SEPTEMBER 12, 1922.

ALUM.—The market for this commodity is firming in tone due to the increasing scarcity of available supplies. Powdered alum is listed at \$3.50 to \$3.75 per hundred pounds while the ground is quoted at \$3.40 to \$3.60.

BLEACHING POWDER.—Increased freight rates has brought the price of bleach up around \$1.70 and \$1.75 a hundred for all new business. This price extends to all large drum quantities, works. Some bleach is still being turned over at the \$1.60 and \$1.65 price, but higher transportation and coal costs have forced a general increase.

BLANC FIXE.—Prices are fairly steady in the blanc fixe market and a decided stiffening is anticipated with the approach of fall business. The pulp is quoted at \$40 to \$50 a ton and the dry still holds at \$75 to \$85.

CAUSTIC SODA.—Caustic prices continue unchanged despite production difficulties. Sixty per cent caustic is still quoted in the neighborhood of 2.70 cents a pound, works.

CHINA CLAY.—Transatlantic freight rate increases combined with the recent difficulty in securing enough ships to transport China Clay to this country, have had the effect of raising the price of the commodity. Unwashed domestic clay is now quoted at \$6 to \$8.50 per ton, washed at \$8 to \$11 and imported at \$16 to \$23.

LIQUID CHLORINE.—What is described by a prominent chlorine dealer as a "catch-as-catch-can" demand now prevails in the market for this chemical. It is only by looking back at the earlier summer months that any appreciable improvement may be noted in the tone of the market. Prices vary from 4.00 to 7.00 cents a pound, depending upon the quantity and container.

ROSIN.—Rosin prices have been fairly steady throughout the past week, grades E, F and G being listed at \$6.25 per barrel of 280 pounds, New York. There is a steady activity in the market and demand appears to be on the increase.

SALTCAKE.—New York dealers state that it is almost impossible to secure any quantity of saltcake at present. Everyone is coming into the market at once with the result that higher prices are being asked with nearly every sale that is made. Saltcake is now quoted as high as \$22 per ton, works, and acidcake is up around \$25 and \$26.

SATIN WHITE.—Moving in regular quantities, satin white has held fairly steady at the quoted price of 1.50 to 2.00 cents a pound. Dealers report that the demand is gradually increasing on the part of fine and book paper manufacturers.

SODA ASH.—No change has been noted in the soda ash market of the past week. The 1922 price schedule of 1.51 cents a pound still rules for barrel quantities, while bulk and bag lots are quoted at 1.20 and 1.30 cents respectively.

SULPHUR.—Brimstone is finding its way into consuming channels in regular quantities, the schedule price of \$18 to \$20 per ton still obtaining. Higher prices are anticipated beginning January 1.

STARCH.—The starch market has been steady to firm in recent weeks and no perceptible price variations have occurred of late. Powdered starch is quoted at 2.47 cents a pound in bags and 2.75 in barrels, while pearl starch is approximately 1/10 of a cent a pound higher. Manufacturers expect prices to remain easy for the next couple of months as a result of the large corn crop.

SULPHATE OF ALUMINA.—The aluminum sulphate market is reported to be in a very serious condition due to the fact that many eastern plants are embargoed and are unable to obtain sufficient quantities of bauxite. Producers of this chemical are paying outrageous prices for coal, in many cases ranging from 300 to 400 per cent above previous costs, and are, consequently, forced to ask higher prices. Iron free is quoted at \$2.25 to \$2.50 per cwt. and commercial at \$1.50 to \$1.75.

Market Quotations

(Continued from page 71)

Solid Ledger Stock.	2.25	@	2.50	New Black Soft.	.03	@	.03M
Writing Paper.....	.02	@	2.25	New Light See	.02	@	.02M
No. 1 Books, heavy.	1.80	@	1.90	Khaki Cuttings...	.02M	@	.02M
No. 2 Books, light.	1.40	@	1.50	Corduroy .....	.02	@	.02M
No. 1 New Manila.	2.75	@	3.00	New Canvas.....	.07	@	.07M
No. 1 Old Manila...	1.50	@	1.75	New Black Mixed	2.75	@	3.00
Container Manila...	1.20	@	1.25	Old			
Old Kraft.....	2.25	@	2.50	White, No. 1—			
Overissue News....	1.25	@	1.30	Repacked .....	.06	@	.06M
Old Newspaper....	1.15	@	1.20	Miscellaneous ...	.04M	@	.04M
No. 1 Mixed Paper.	.01	@	1.10	White, No. 2—			
Common Paper.....	.75	@	.80	Repacked .....	.03	@	.03M
Straw Board, Chip.	.75	@	.80	Miscellaneous ...	.02M	@	.02M
Binders' Bd. Chip..	.75	@	.80	Thirds and Blues—			
Domestic Rags—New.				Repacked	1.65	@	1.80
Price to Mill, f. o. b. Phila.				Miscellaneous ...	1.40	@	1.55
Shirt Cuttings—				Black Stockings...	1.75	@	2.25
New White, No. 1	.10	@	.10M	Roofing Stock—			
New White, No. 2	.05M	@	.06M	No. 1.....	1.00	@	1.10
Silesias, No. 1....	.05M	@	.06	No. 2.....	.90	@	1.00
New unbleached..	.09	@	.09M	No. 3.....	.80	@	.90
Washables .....	.03M	@	.03M	No. 4.....	.80	@	.90
Fancy .....	.04M	@	.04M	No. 5A.....	nominal		
Cottons—according to grades—				B.....	nominal		
Blue Overall.....	.04M	@	.05M	C.....	nominal		
New Blue.....	.02	@	.02M				

BOSTON

[FROM OUR REGULAR CORRESPONDENT.]

Paper				Wood, Vat Lined..	60.00	@	65.00
Bonds .....	.06M	@	.65	Filled News Board.	52.50	@	55.00
Ledgers .....	.07M	@	.55	Solid News Board..	60.00	@	65.00
Writings .....	.07M	@	.42	S. Manilla Chip....	62.50	@	67.50
Superfine .....	.15	@	.22M	Pat. Coated.....	70.00	@	85.00
Fine .....	.15	@	.18				
Books, S. & S. C...	.07	@	.12	Old Papers			
Books, M. F.....	.05M	@	.10	Shavings—			
Books, coated....	.08	@	.16	No. 1 Hard White	4.00	@	4.25
Label .....	.08M	@	.13	No. 1 Soft White	3.30	@	3.45
News, sheets	4.00	@	4.25	No. 1 Mixed.....	1.50	@	1.75
News rolls.....	4.00	@	4.25	Ledgers & Writings	1.75	@	2.00
Manillas—				Solid Books.....	2.00	@	2.25
No. 1 Manila....	\$5.50	@	7.00	Blanks	1.70	@	1.80
No. 1 Fibre .....	.07M	@	—	No. 2 Light Books.	1.50	@	1.80
No. 1 Jute.....	10.50	@	12.00	Folded News, over-			
Kraft Wrapping...	.06M	@	.12	issues	19.00	@	20.00
Common Bogus....	3.00	@	3.50	Gunny Bagging ...	.85	@	.90
Boards				Manila Rope.....	5.75	@	6.00
(Per Ton Destination)				Common Paper....	.80	@	.90
Chip	\$50.00	@	55.00	Old News.....	.80	@	.90
News, Vat Lined..	51.50	@	55.00	Old Kraft.....	1.75	@	2.00

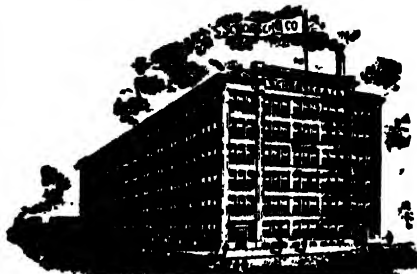
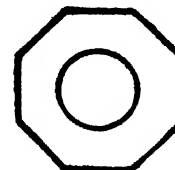
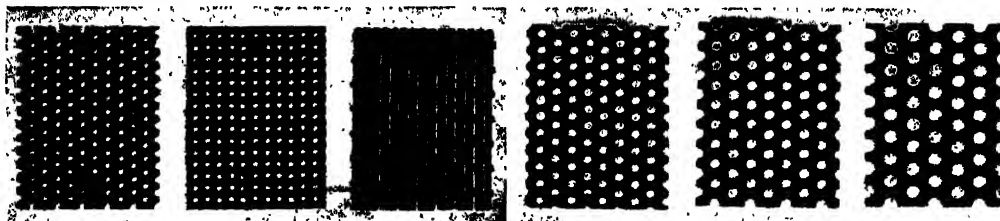
TORONTO

[FROM OUR REGULAR CORRESPONDENT.]

Paper				Sulphite, bleached..	80.00	@	90.00
(Mill Prices to Jobbers f. o. b. Mill)				Sulphate	70.00	@	—
Bond—				Old Waste Papers			
Sulphite .....	.11	@	.12M	(In carload lots, f. o. b. Toronto)			
Light tinted....	.12	@	.13M	Shavings—			
Dark tinted....	.13M	@	.15	White Env. Cut...	3.75	@	—
Ledgers (sulphite).	—	@	.13	Soft White Book	—	@	—
Writing .....	.9M	@	.12	Shavings	3.40	@	3.40
News, f. o. b. Mills—				White Blk News	1.70	@	—
Rolls (carloads).	3.50	@	—	Book and Ledger—			
Sheets (carloads).	—	@	4.25	Flat Magazines and			
Sheets (2 tons or				Book Stock (old)	1.70	@	—
over)	—	@	4.50	Light and Crum-			
Book—				ples Book Stock	1.55	@	—
No. 1 M. F. (car-				Ledgers and Writ-			
loads)	8.50	@	—	ings	1.95	@	—
No. 2 M. F. (car-				Solid Ledgers....	1.95	@	—
loads)	7.50	@	—	Manillas—			
No. 3 M. F. (car-				New Manila Cut.	1.70	@	1.80
loads)	7.00	@	—	Printed Manillas..	.90	@	1.00
No. 1 S. C. (car-				Kraft	2.25	@	—
loads)	9.00	@	—	News and Scrap—			
No. 2 S. C. (car-				Strictly Overissue	.90	@	—
loads)	8.00	@	—	Folded News....	.80	@	—
No. 1 Coated and				No. 1 Mixed Pa-			
litho.....	14.00	@	—	pers .....	.70	@	—
No. 2 Coated and				Domestic Rags—			
litho.....	13.00	@	—	Price to mills, f. o. b. Toronto.			
No. 3 Coated and				Per lb.			
litho.....	12.25	@	—	No. 1 White shirt			
Coated and litho,				cuttings .....	.11	@	.11M
colored	14.25	@	—	No. 2 White shirt			
Wrapping—				cuttings .....	.06M	@	—
Grey	4.50	@	—	Fancy shirt cut-			
White Wrap	5.00	@	—	tings .....	.05	@	.05M
"B" Manilla	5.50	@	—	No. 1 Old whites	.04	@	—
No. 1 Manilla	6.75	@	—	Thirds and blues	.02	@	.02M
Fibre	6.75	@	—	Per cwt.			
Kraft, M. F.	8.00	@	—	Black stockings..	2.00	@	2.25
M. G.	8.15	@	—	Roofing stock:			
Pulp				No. 1.....	1.35	@	—
(F. o. b. Mill)				No. 2.....	1.50	@	—
Ground wood.....	\$25.00	@	37.50	Roofing stock:			
Sulphite easy bleach-				No. 1.....	.06	@	.06M
ing	60.00	@	63.00	Manila rope.....	.01M	@	.01M
Sulphite news grade.	45.00	@	55.00	Gunny bagging....	1.00	@	1.20

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132ND TO 133RD ST & BROOK AVEon a Paper
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thicknesses
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If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio33 WEST 42ND ST., NEW YORK**Ecco Clays 500,000 Tons Annually**DELIVERIES FROM PRODUCER INSURE AND
ENABLE YOU TO PRODUCE UNIFORM PAPER**Highest Grades Filler and Coating Clays**

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Minimum rate for advertisements of 25 words or less, first insertion, \$1.00.

SITUATION WANTED, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED—Superintendent for one machine Mill to run on high grade Patent Coated Boards. Mill will be operated as a branch of large folding box factory. Applicant must be capable of taking charge of Mill including purchasing of supplies, hiring of help and supervising production. Big possibilities for the right man, who has had experience on this grade of board. Write, giving experience, age and salary expected. Address, Box 5421, care Paper Trade Journal. S-14

WANTED—Machinist Engineer, all around mechanic, capable of taking charge, repair work steam power plant and machine shop of small mill in Philadelphia district. State age, experience and wages required. Address, Box 5417, care Paper Trade Journal. S-14

PAPER BAG SALESMAN—Experienced to manage bag paper department, have exclusive selling rights in Eastern territory for large out of town manufacturer. Good opportunity for party with established trade, give complete experience in first letter, commission basis. Address, Box 5418, care Paper Trade Journal. S-14

SALESMAN WANTED for Coating Mill situated in the East. Must be high class man and have considerable experience in selling high class coated papers. Good position for the right man. Address, Box 5364, care Paper Trade Journal. S-14

WANTED—First class machine tender on two-cylinder tissue and specialty machine. Address, Box 5365, care Paper Trade Journal. S-14

WANTED—Mechanical engineer with Paper and Pulp Mill experience. Must be familiar with structural steel and reinforced concrete design. Permanent position for right man. Give age, references, nationality, salary receiving and expected in first letter. Address, Box 5388, care Paper Trade Journal. S-14

PURCHASING AGENT

Energetic and up-to-date, immediately, for modern waxed paper plant in Middle West. Must be experienced paper man and fully conversant with all converting processes. One with mechanical and engineering knowledge preferred. Well paying, permanent position with future. Answer with full details of references and experience. Address, Box 5376, care Paper Trade Journal. S-14.

HELP WANTED

WANTED—Night Superintendent, Mill middle west, manufacturing converted sulphite. Must be good, sober, industrious worker. Must understand washing, bleaching and general making of stock. One who can get good production. Married man preferred. References first letter. Address, Box 5401, care Paper Trade Journal. S-21

WANTED—Black tenders. Experienced on roofing machines. Mill in Eastern city. Good wages. Steady work. Address, Box 5402, care Paper Trade Journal. S-21

WANTED—Competent Board Mill Superintendent thoroughly capable repairing mill damaged by fire and operating. Attractive proposition to right man. Mill located in South. Address, Box 5403, care Paper Trade Journal. S-21

SALESMAN or agent to represent manufacturer. One calling on tanners or paper mills, to carry as a side line special Aniline Colors for this trade. Address, Box 5404, care Paper Trade Journal. S-14

WANTED—Thoroughly competent container and carton salesman to travel large producing territory in Midwest. Territory confined to two states. Only experienced applicants will be considered. Straight salary. Splendid opportunity for high grade salesman. Address, Box 5405, care Paper Trade Journal. S-14

WANTED—Superintendent for Fourdrinier Tissue Mill. Must be up on Waxing papers from ten pound to thirty pound. Send copy of references and state experience and salary wanted. Address, Box 5389, care Paper Trade Journal. S-14

WANTED—Beater engineer, back tender cutterman and trimmerman for book and railroad writing mill. Give references in reply. Address, Box 5391, care Paper Trade Journal. S-21

WANTED—Capable and reliable Beater Engineer for Mill located in Middle West. Manufacturers of sulphite papers and specialties. Experience necessary on colors. Good wages. Three four day. Address, Box 5394, care Paper Trade Journal. S-14

Toilet Paper Salesman

We have opening in our Sales Department for two (2) Traveling salesmen who have had experience in selling Toilet Paper and towels to the large Jobbing Trade. On account large territory and constant traveling we can consider only unmarried men, or men without family attachments. American nationality. Age 21 to 40. Salary and expenses. Write giving age, experience and full details in first letter stating salary expected. Address, Sales Manager, Sauquoit Paper Co., New Hartford, New York. S-14

SITUATIONS WANTED

WANTED—Position as Machine Tender on Harper and Edwards attachment Cylinder Tissue Machine. Heavy weight waxing paper on Harper. Address, Box 5398, care Paper Trade Journal. S-14

YOUNG MAN, 24, at present employed wishes to make change. Desirous of connecting with reliable concern, where there is possibility for good future. Have worked in capacity as salesman, office man and have had five years of mill experience. Address, Box 5367, care Paper Trade Journal. S-14

SITUATIONS WANTED

WOOD PULP AND PAPER MILL Supplies man with about 10 years' experience in selling and purchasing these materials desires connection with progressive firm. A-1 references. Address, Box 5255, care Paper Trade Journal. S-14

ASSISTANT TO GENERAL MANAGER or President as Plant Manager. Wide experience on rope paper and bags. Capable taking entire charge as executive. Age, 45. Desirable connection wanted rather than immediate large salary. Address, Box 5419, care Paper Trade Journal. S-21

MECHANICAL ENGINEER with several years' practical experience as superintendent of ground wood, sulphite and news print mills, would like to make change. Address, Box 5106, care Paper Trade Journal. S-28

PAPER AND PULP MAN: Open for engagement. Extensive experience. Practical knowledge purchasing, manufacturing and selling. Specialty increasing profits. Highest references. Address, Box 5407, care Paper Trade Journal. S-21

SUPERINTENDENT and technical man with nine years' experience in paper making and laboratory research desires opportunity to learn all phases of office administration in up-to-date paper mill. Nominal salary required. Address, Box 5408, care Paper Trade Journal. S-14

SUPERINTENDENT: Now employed desires to make change. Well up on all grades of board. Can handle help and get production. Can handle own repairs and construction. Address, Box 5409, care Paper Trade Journal. O-12

MECHANICAL ENGINEER and Master Mechanic, 18 years' experience in Pulp and Paper Mill Construction. Repairs Wants Position. Expert in hydraulic, steam and electric power. Address, Box 5410, care Paper Trade Journal. S-14

BOSS FINISHER whom previous managers and superintendents have stated "was the best finishing foreman ever employed by them." Experienced on cutters, calendars and shipping. Best references. Address, Box 5374, care Paper Trade Journal. S-14

MASTER MECHANIC with a large experience in construction, reconstruction and efficiency, desires to make change. Address, Box 5383, care Paper Trade Journal. S-14

SUPERINTENDENT of ability open for position. Expert on colors, familiar with all grades of board. Understands plant thoroughly. Is a good executive and can get results. Address, Box 5384, care Paper Trade Journal. S-28

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. S-14

PRACTICAL PAPER MAKER desires a position with a board or specialty mill. Having had experience in both cylinder and fourdrinier mills in all departments. Have been doing engineering work in different mills for past four years. Experienced in construction and mechanical details. Address, Box 5233, care Paper Trade Journal. S-14

SULPHITE SUPERINTENDENT, 20 years' practical and technical training, wishes to get in communication with Managers of Mills who want the best and are not getting it. Address, Box 5353, care Paper Trade Journal. O-5

MECHANICAL ENGINEER; 12 years' experience with thorough knowledge of power plant and engineering. Will submit record for investigation to executive requiring reduction in power costs and coal consumption. Address, Box 5400, care Paper Trade Journal. S-28

SITUATIONS WANTED

MILL MAN seeking new connection. Fifteen years' experience manufacturing wrapping paper, bag paper, news specialties, sulphite and ground wood. Also sales experience, cost accounting and purchasing. Good record in executive positions. Now employed. Address, Box 5411, care Paper Trade Journal. S-21

COST ACCOUNTANT and office manager with sound paper experience and first class references seeks responsible position. Address, E. J. B., P. O. Box 760, Cincinnati, Ohio. S-14

SUPERINTENDENT wants position. Can make all grades of box board, and all kinds of wrapping paper. Bogus Mill, can bring an order for one hundred tons a month. Address, Box 5412, care Paper Trade Journal. S-14

SALESMANAGER with 15 years' experience in merchandising and handling of salesmen, desires connection with high grade respectable paper mill. Address, Box 5413, care Paper Trade Journal. S-21

SALESMANAGER AND BUSINESS EXECUTIVE: 15 years' experience in practically all lines of paper, particularly specialties, 12 years with one concern. Experience in administration, buying, selling, advertising and general management. Christian, 33 years old. Open for a permanent connection where there is a future for the right man. Address, Box 5385, care Paper Trade Journal. S-21

SALESMAN—Specialist on Coated Lithographic Papers and Boards; also Offset and Printing Papers, desires to connect with mill or dealers having mill connections. Can produce good business. Address, Box 5260, care Paper Trade Journal. S-28

FOR SALE

MACHINERY FOR SALE—Tanks, 300 to 50,000 Gallon Steel Storage Tanks. Copper and Iron Jacketed Kettles, all makes and sizes. Filter presses, 1 Oliver Continuous Filter 6' x 1', 18" x 18" and 24" x 24", all makes and sizes. Pumps, No. 5 Cameron Piston Pump Bronze End, Worthington and other makes. Air Compressors, Bury 16 x 8 x 10 (2-stage). Other makes and sizes. Mixers, Werner & Pfleiderer, Kent, Day & Ross. All sizes. R. Golt & Sons, 214 Livingston Street, Newark, N. J. S-14

FOR SALE: 16—7 Column Steel Chases, 1 Book Binding Press, 7 Rolls each 50 1/2" and 33 1/2" Great Northern Newsprint. Also quantity 18 x 23 matrix and tissue paper. Address, Box 5420, care Paper Trade Journal. S-21

FOR SALE—6 Farnum Drives. Complete Triple-Deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. S-14

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MISCELLANEOUS

WANTED—One or two Wandell Rotary Screens, also one Save-all. State age, condition and full details, together with lowest price for cash. Address, Box 5377, care Paper Trade Journal. S-14

WANTED—One 50-inch Seybold Paper Cutter, one 22x44 Sheridan die press, one large embossing press, one 12-inch or larger rotary divider machine. Address, Box 5396, care Paper Trade Journal. S-14

WANTED—One Nash Hytor Turbine Vacuum Pump, Number four or number six. Write Mill Department, Rose Lithographic Corporation, 55 33rd Street, Brooklyn, N. Y. S-15

CYLINDER MOULDS WANTED—Either 36 or 30 inches diameter and anywhere from 80 to 88 inches face. Price must be reasonable. Address, H. O. Ruby, York, Pa. S-28

ADVERTISER wishes to correspond with party owning small Paper Mill with Fourdrinier Machine about 76 inches wide, to manufacture specially realizing large profits. Further particulars. Address, Box 5414, care Paper Trade Journal. S-21

WANTED—The present address of Fred Fav. Address, Box 5415, care Paper Trade Journal. S-14

WANTED AT ONCE, at bargain price. 1,000 pound iron tub beater, must be in good condition. Address, Box 5416, care Paper Trade Journal. S-14

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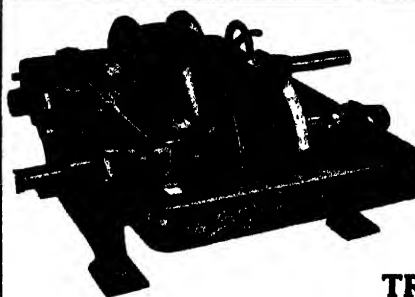


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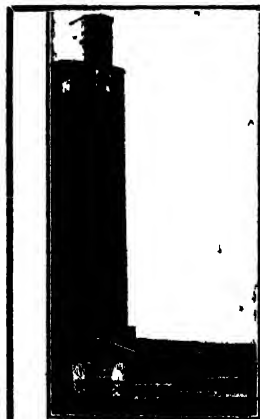
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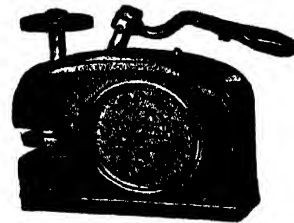
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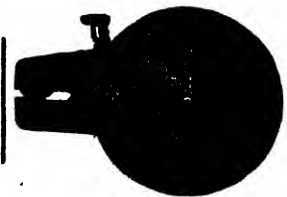
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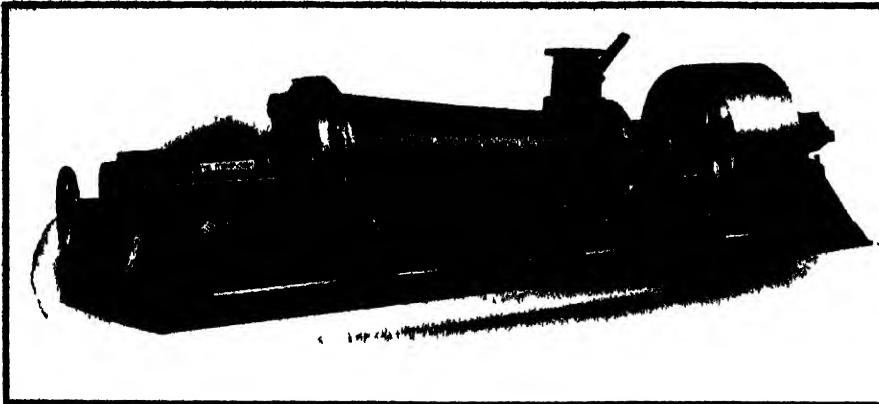
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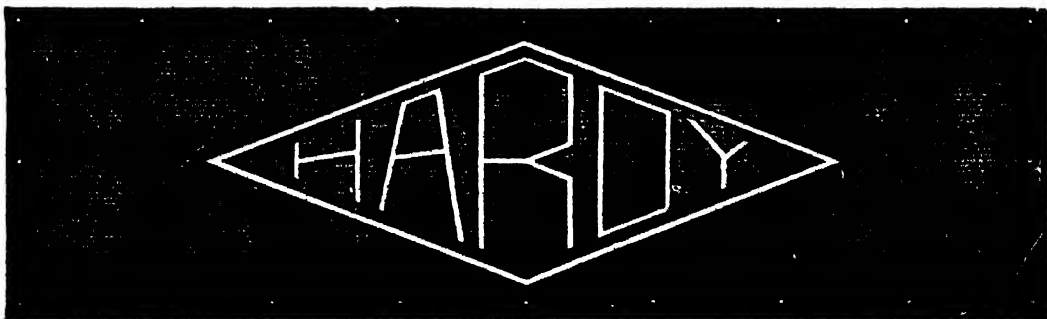


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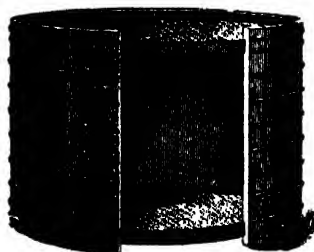
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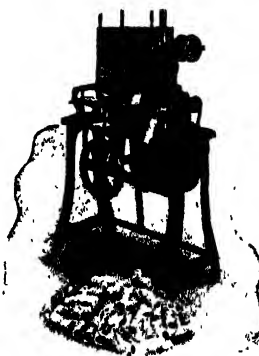
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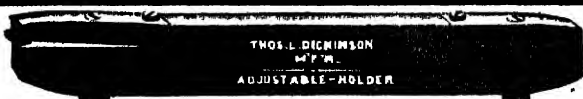
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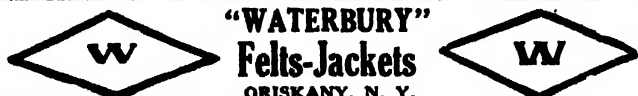
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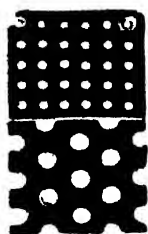
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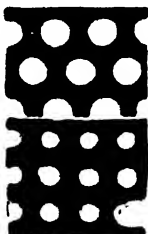
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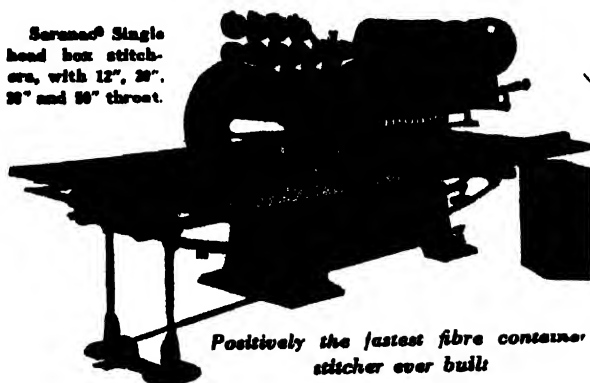
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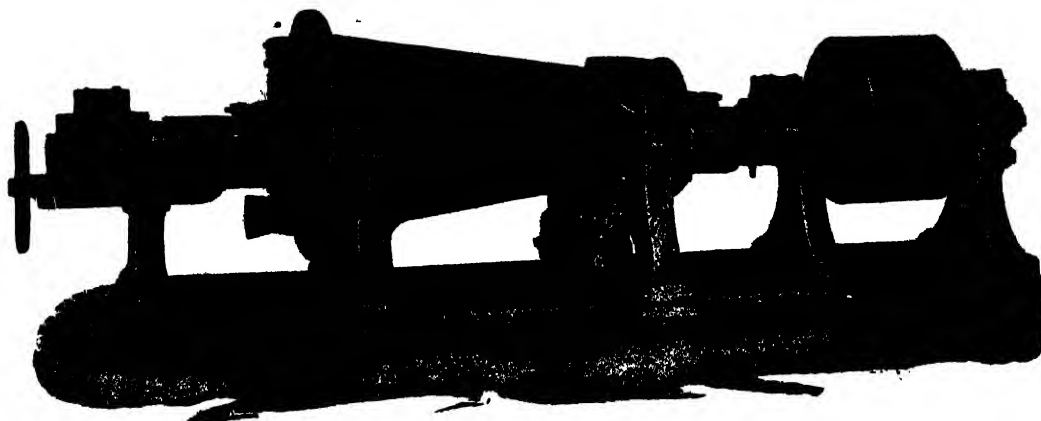
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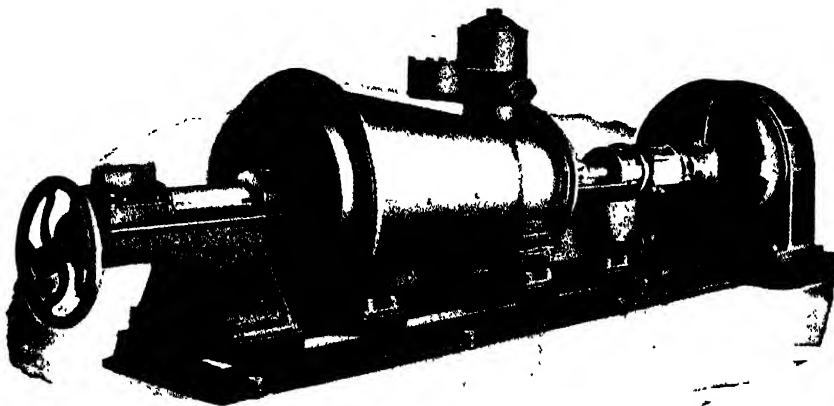
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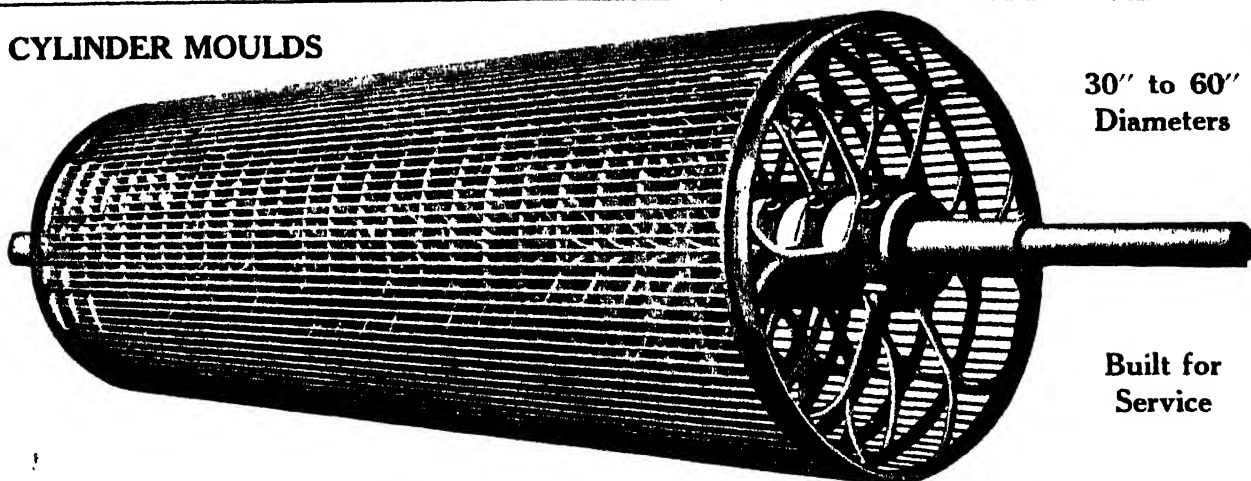


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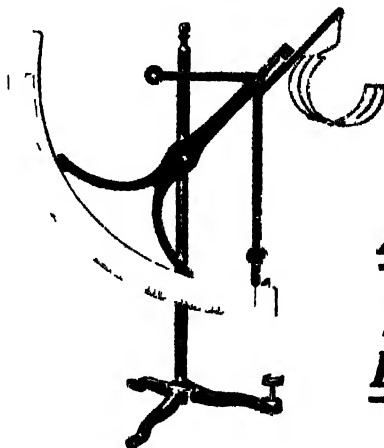
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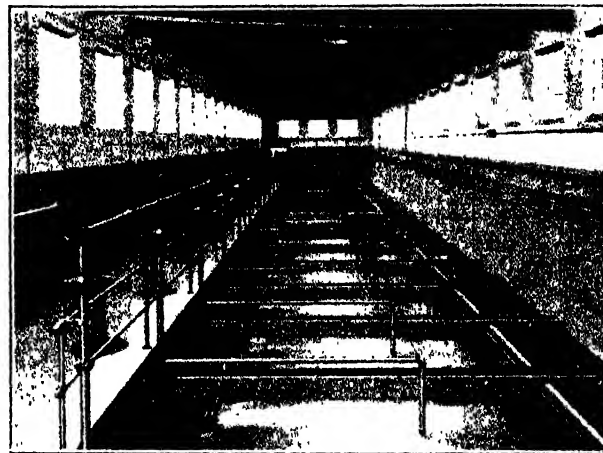
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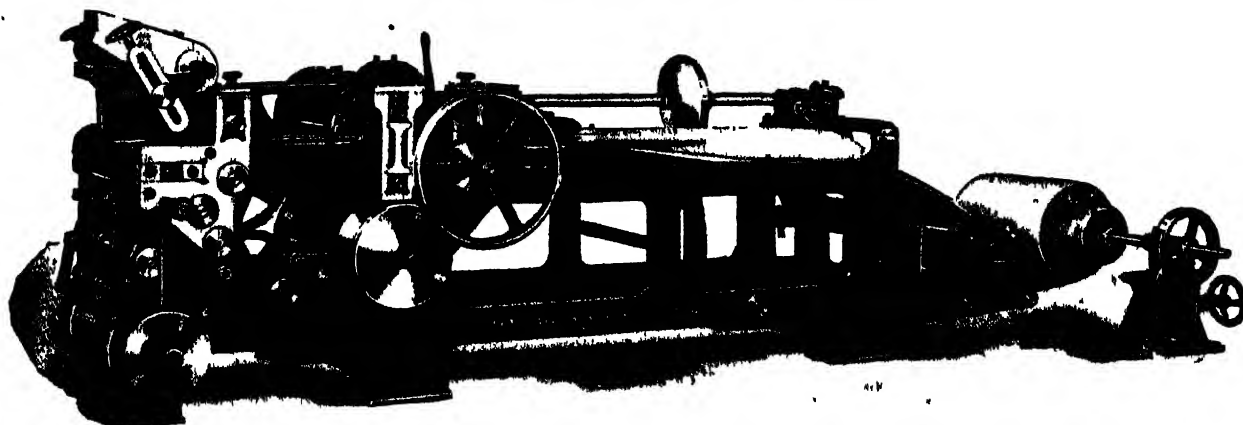
PAPER MAKING—PAPER CUTTING MACHINERY

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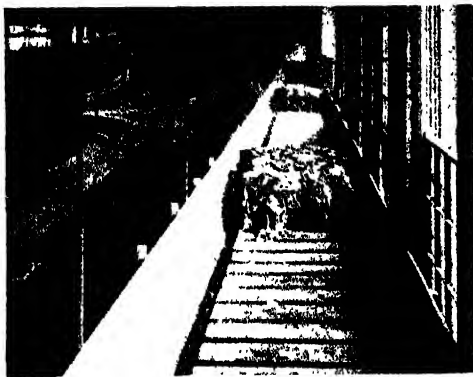
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AND LATEST IMPROVED PATENTED

Automatic Tube Machines

For Making Tubes for Toilet
Paper Rolls, Paper Towel Rolls

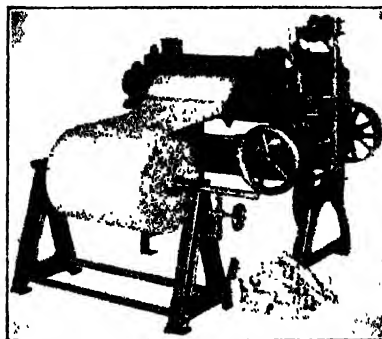
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per hour direct
from roll.

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Substantially built
and fully guaranteed.



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**Bed Plates Jordan Fillings
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*Uniformly High Grade
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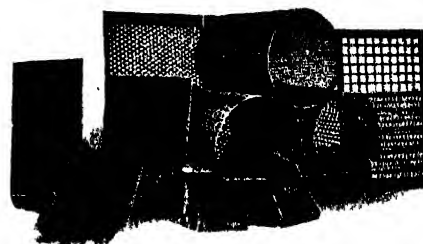
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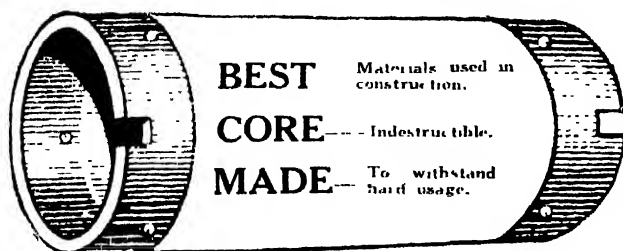
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can now be secured as promptly and cheaply
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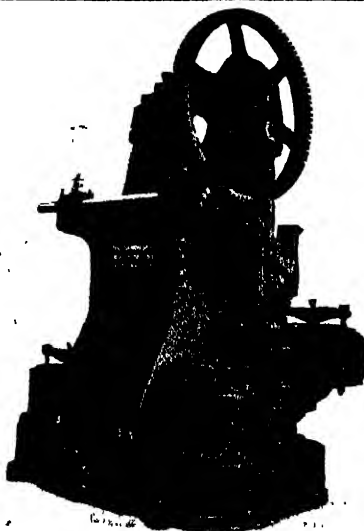
Our plants are located

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Elixman Paper Core Co.
CORINTH, N. Y.

2

Save Power



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They are made to fit the working conditions and guaranteed to get the highest efficiency.

We also build the full line of Sandusky Triplex pumps.

Let us have your specifications for quotations.

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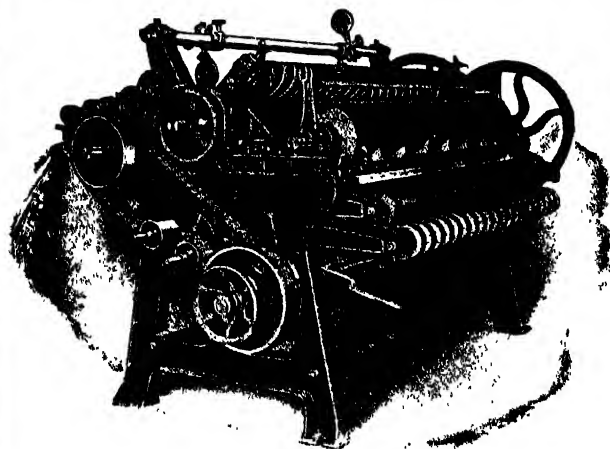
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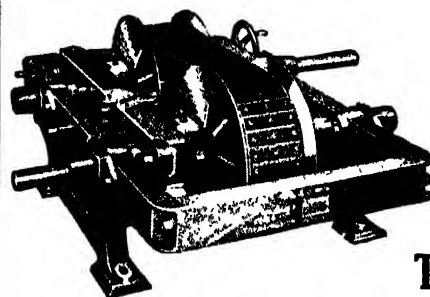
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Single, Duplex and Diagonal



Cutter Knives Patent Top Slitters

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The Reeves
**Variable
Speed
Transmission**

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PATENT EQUALIZING COLLARS

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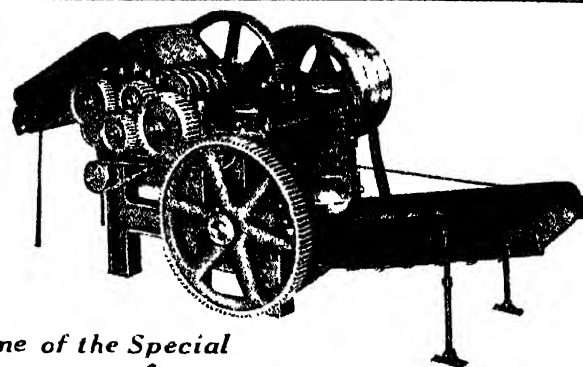


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Napkins and Towels
are favorites because
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them profitable and
the consumer pleasing.

Fort Howard Paper Co.
Green Bay, Wis.



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Advantages of*

THE PERKINS RAG CUTTER

Large Capacity
Very low power consumption
Dustless operation
No waste of stock
Clean shear-cut

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Paper Tester, the Perkins Paper Roller,
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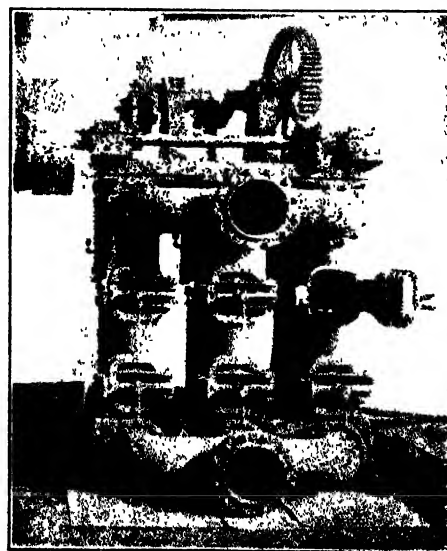
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**PAPER
and
PULP
MILLS**

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AND

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Paper manufacturers generally recognize the value of starch in the manufacture and coating of paper.

To obtain definite results in any desired direction in the preparation of paper, not merely a difference of grade, but a difference of kind or variety of starch is required.

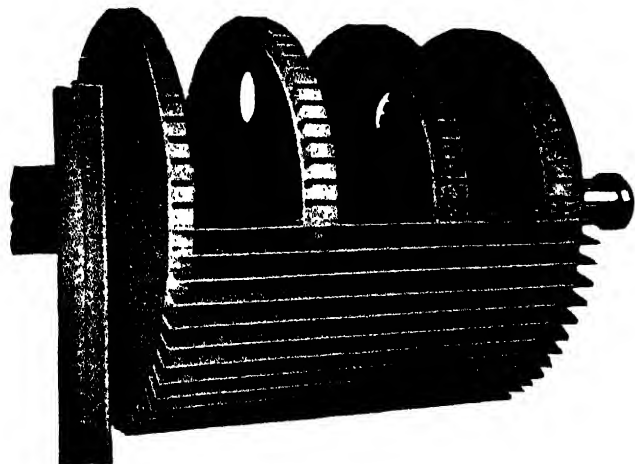
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Corn Products Refining Company

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New York

Starch



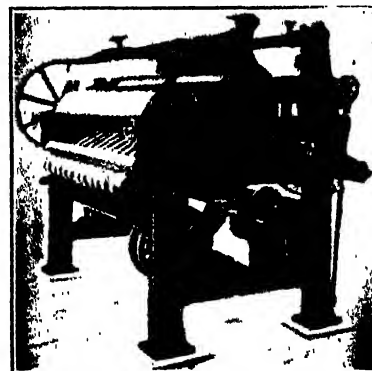
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BEATING and WASHING ENGINES

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Our new KEYED TYPE BANDLESS ROLL is the final result of many Years of Experience.

May we not tell you about its many advantages?

We offer a full line of

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and furnish precise directions on application for

Beater Dyeing, Staining and Coating

Half a century's experience enables us to furnish goods answering requirements
and to give reliable service

THE HELLER & MERZ CO.

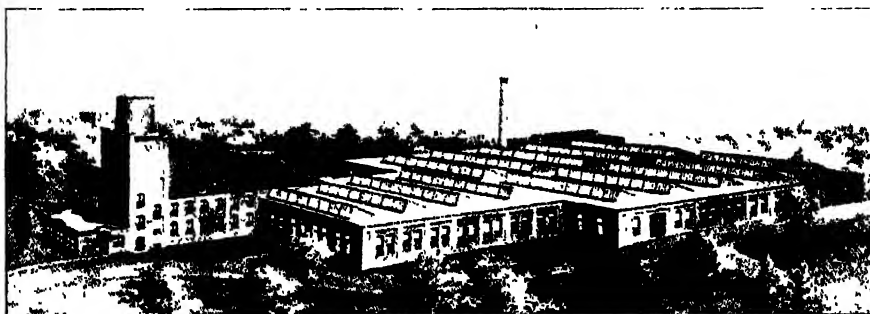
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Production 50,000 Tons

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MEMBER OF THE A. B. C.

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THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY

FIFTY-FIRST YEAR

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Cable Address Catchow, New York

Western Publication Office—431 S. Dearborn Street, Chicago
New England Office—Room 46, 127 Federal Street, Boston

London Office—Stonhill & Gillis, 58 Shoe Lane

Washington Office—L. M. Lamm, 63 Home Life Bldg.
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Vol. LXXV. No. 13

NEW YORK AND CHICAGO

Thursday, September 28, 1922

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PRODUCTION OF NEWS PRINT FOR THE MONTH OF AUGUST

Mill Stocks of Both Total News Print and Standard News, According to Statistics Just Issued By the Federal Trade Commission Decreased During the Month—Production For August, 1922, as Compared with August of Last Years Shows an Increase of About 30 Per Cent for Both Total News Print and Standard News and Three Per Cent Increase Over August, 1920.

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 27, 1922.—The following is a tabulation of the reports received by the Federal Trade Commission from domestic manufacturers of news print paper, from jobbers buying and selling news print paper, and from publishers using news print paper. Import and export statistics of the Department of Commerce are also included in the review. Whenever possible the figures for 1922 are compared with those for the corresponding period of 1921, 1920, 1919 and 1918.

The figures which follow show the results of the Commission's tabulation for August 1918 to 1922, inclusive.

Total News Print:	No. of mills	Stocks on hand 1st of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
Aug., 1922	83	21,156	133,236	134,490	19,902
Aug., 1921	92	25,519	102,277	100,668	27,128
Aug., 1920	86	22,022	128,818	126,129	24,711
Aug., 1919	73	28,225	113,413	116,054	25,584
Aug., 1918	65	24,912	113,731	116,970	21,673
Total (8 mos.) 1922		23,934	944,217	948,249	19,902
Total (8 mos.) 1921		24,763	811,972	809,607	27,128
Total (8 mos.) 1920		15,369	1,018,295	1,008,953	24,711
Total (8 mos.) 1919		19,408	898,483	892,307	25,584
Total (8 mos.) 1918		31,713	857,108	867,148	21,673

Standard News (Included in total News Print):	No. of mills	Stocks on hand 1st of month Net tons	Production Net tons	Shipments Net tons	Stocks on hand end of month Net tons
Aug., 1922	68	16,366	123,481	123,830	16,017
Aug., 1921	74	20,964	95,105	93,341	22,728
Aug., 1920	69	19,127	117,356	114,546	21,937
Aug., 1919	53	23,325	101,875	103,817	21,383
Aug., 1918	50	18,635	102,566	104,694	16,507
Total (8 mos.) 1922		19,607	878,182	881,772	16,017
Total (8 mos.) 1921		19,616	746,826	743,714	22,728
Total (8 mos.) 1920		12,338	933,456	923,857	21,937
Total (8 mos.) 1919		15,656	813,050	807,323	21,383
Total (8 mos.) 1918		26,482	770,927	780,902	16,507

NOTE—Above figures for total news print do not include hanging paper.

The average production of total news print and standard news, based upon the total combined production for the years 1917 to 1921, inclusive, amounted to 118,800 tons of total newsprint and 107,676 tons of standard news, for a period corresponding to August. The actual production for August, 1922, amounted to 133,236 tons of total news print and 123,481 tons of standard news, which, for total news print was 12 per cent above the average for the five year period and for standard news 15 per cent above the average.

The production of news print for August, 1922, compared with August, 1921, shows an increase, amounting to about 30 per cent for both total news print and standard news.

The production for August, 1922, compared with August, 1920, shows an increase of 3 per cent for the total news print and 5 per cent for standard news.

The production for August, 1922, compared with August, 1921, shows an increase of 17 per cent for total news print and 21 per cent for standard news.

The production for August, 1922, compared with August, 1918, shows an increase of 17 per cent for total news print and 20 per cent for standard news.

Mill stocks of both total news print and standard news decreased during, August, 1922.

Loss of Production

The following tabulation shows idle machine time reported to the Commission for the month of August, 1922. This does not include mills shut down during the entire month:

Reasons	No. of machines	Hours idle
Lack of orders	8	1,976
Repairs	5	605
Other reasons	3	146

Imports and Exports

The imports and exports of printing paper not duitable (practically all news print) and of wood pulp for the month of July, 1922, compared with the month of July, 1921, as shown by the records of the Department of Commerce, were as follows:

	July, 1922 Net tons	July, 1921 Net tons
Imports of News Print (total)	80,337	66,118
From Canada	73,457	58,183
Germany	1,150	4,586
Finland	2,179	11
Sweden	3,433	2,344
Other countries	118	994
Exports of News Print (total)	2,139	1,059
To Argentina	289	.....
Japan	85	.....
Cuba	1,101	378
Canada	86	.....
Philippine Islands	194	182
Other countries	384	499
Imports of Ground Wood Pulp (total)	17,181	15,329
Imports of Chemical Wood Pulp (total)	90,637	32,787
Unbleached Sulphite	41,405	16,424
Bleached Sulphite	18,240	6,358
Unbleached Sulphate	27,611	10,003
Bleached Sulphate	3,381	2
Exports of Domestic Wood Pulp	1,569	1,493

The imports of newsprint for July, 1922, were 14,219 tons more than for July, 1921. The exports for July, 1922, were 1,080 tons more than for July, 1921.

The tonnage to "other countries" under "Exports of News Print" for July, 1922, includes 36 tons to Peru, 50 tons to Mexico, 62 tons to China, 60 tons to Colombia, and 55 tons to Uruguay.

Jobbers' Tonnage

The following tabulation shows the newsprint tonnage reported by jobbers during the month of August, 1922, compared with August, 1921, 1920, 1919 and 1918, together with commitments to buy and sell:

	On hand 1st of month Net tons	Received during month Net tons	Shipped during month Net tons	On hand end of month Net tons	Commitments to buy Net tons	Commitments to sell Net tons
Rolls, Aug., 1922	1,418	10,592	10,326	1,684	16,646	16,810
Rolls, Aug., 1921	1,560	1,960	1,954	1,566	21,984	20,935
Rolls, Aug., 1920	3,253	4,147	3,014	4,386	26,944	27,747
Rolls, Aug., 1919	3,348	4,635	4,919	3,064	37,304	43,762
Rolls, Aug., 1918	2,709	1,751	1,733	2,727	36,052	35,574
Sheets, Aug., 1922	3,732	3,473	3,247	3,958	4,484	3,033
Sheets, Aug., 1921	3,935	1,743	2,087	3,591	5,058	3,754
Sheets, Aug., 1920	2,984	6,246	5,739	3,491	4,384	3,031
Sheets, Aug., 1919	5,880	3,178	3,354	5,704	3,817	2,165
Sheets, Aug., 1918	7,024	2,591	2,872	6,743	6,886	5,618
Total News Print:						
Aug., 1922	5,150	14,065	13,573	5,642	21,130	19,843
Aug., 1921	5,495	3,703	4,041	5,157	27,042	24,689
Aug., 1920	6,237	10,393	8,753	7,877	31,328	30,778
Aug., 1919	9,228	7,813	8,273	8,768	41,121	45,927
Aug., 1918	9,733	4,342	4,605	9,470	42,938	41,192

Stocks of rolls in the hands of jobbers at the end of August were 266 tons more than the stocks in the hands of the same jobbers at the beginning of the month. Stocks of sheets were 226 tons more at the end of August than at the beginning of the month. The net increase in the total stocks of news print in the hands of jobbers at the end of August amounted to 492 tons.

Commitments to sell roll news were 164 tons greater than commitments to buy. Commitments to sell sheet news paper were 1,451 tons less than commitments to buy. Total commitments to

sell both rolls and sheets were 1,287 tons less than commitments to buy.

Publishers' Tonnage

Monthly tonnage reports from 693 (a) of the most important newspaper publishing concerns and associations grouped according to the principal business sections of the United States, together with a separate tabulation for the agricultural publications, show the following results for August, 1922.

Location of publishers (b)	Number of concerns	On hand first of month Net tons	Received during month Net tons	Used and sold during month Net tons	On hand end of month Net tons	In transit end of month Net tons
New England	80	16,994	17,730	15,297	19,427	1,656
Eastern States	179	51,321	67,031	57,231	61,121	11,313
Northern States	136	42,827	38,768	34,589	47,006	13,601
Southern States	82	9,177	11,133	9,279	11,031	3,372
Middle West	152	27,032	28,179	25,306	29,905	6,820
Pacific Coast	37	17,816	15,721	14,793	18,744	3,960
Farm Papers (c)	27	6,243	1,306	1,160	6,389	222
Total	693	171,410	179,868	157,655	193,623	40,944

(a) This number represents a larger number of publications.

(b) *New England* includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island and Vermont; the *Eastern States* include Delaware, the District of Columbia, Maryland, New Jersey, New York and Pennsylvania; the *Northern States* include Illinois, Indiana, Michigan and Ohio; the *Southern States* include Alabama, Florida, Georgia, Kentucky, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee, Virginia and West Virginia; the *Middle West* includes Arizona, Arkansas, Colorado, Idaho, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, Utah, Wisconsin and Wyoming; the *Pacific Coast* includes California, Oregon and Washington.

(c) The farm papers for the most part use special grades of news print instead of standard news.

Publishers' stocks increased 22,213 tons during the month. Average daily tonnage used during August was 93 tons less than the average used during July.

Publishers' stocks and transit tonnage on August 31 represented 47 days' supply at the existing rate of consumption.

Publishers' and Jobbers' total stocks and tonnage in transit on August 31 aggregated 240,209 tons.

The domestic consumption of standard news by metropolitan dailies using between one-half and three-fourths of a million tons annually for August, 1922, when compared with August, 1921, shows an increase of 17 per cent and an increase of 18 per cent when compared with August, 1920.

The above metropolitan dailies held 61 per cent of the tonnage on hand at the end of the month.

Average Price Paid by Publishers

The weighted average price of contract deliveries from domestic mills to publishers during August, 1922, f. o. b. mill, in car load lots, for standard news in rolls was \$3.522 per 100 pounds. This weighted average is based upon August deliveries of about 50,000 tons on contracts involving a total tonnage of approximately 394,000 tons of undelivered paper manufactured in the United States.

The weighted average contract price based on deliveries from Canadian mills of about 30,000 tons of standard roll news in car load lots, f. o. b. mill, in August, 1922, was \$3.500 per 100 pounds. This weighted average is based upon the August deliveries on contracts involving about 122,000 tons of undelivered Canadian paper.

The weighted average market price for August, of standard roll news in car load lots f. o. b. mills, based upon domestic purchases totaling about 10,000 tons, was \$3.643 per 100 pounds.

Fort Howard Paper Co. Improvements

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 26, 1922.—Construction work has been started by the Fort Howard Paper Company, at Green Bay on a three-story finishing building, 140 feet long by 100 feet wide. The building will be completed by Jan. 1, 1923, it was said.

The structure will be of reinforced concrete and brick. It is to be used for finishing and storage rooms. The excavating is well underway and mason work is to be started soon.

To Buy Aldrich Paper Plant at Natural Dam

WATERTOWN, N. Y., September 25, 1922.—The Oswegatchie Paper Company, Inc., has just closed a deal for the purchase of the property of the Aldrich Paper Company of Natural Dam. Saturday morning the directors of the new corporation voted to sign a contract for the purchase of the property, and on Friday the directors of the Aldrich Paper Company voted to sell under the conditions agreed upon. The consideration involved is not announced, but it is recognized as another of the large paper mill transactions of this section in recent years.

Papers of incorporation of the Oswegatchie Paper Company, Inc., were filed with the Secretary of State at Albany Saturday morning. The company is capitalized at \$200,000, with Samuel B. Wardwell and Addison T. Wardwell holding 350 shares of stock each and E. B. Sterling holding 300 shares.

The deal involves the purchase of all the assets of the Aldrich company, including the power sites and mills at Natural Dam and Emeryville and a timber tract of about 27,000 acres in the Adirondacks. The main mill was burned to the ground a few years ago and has not been rebuilt.

The men in the new corporation are all paper manufacturers. The directors elected Saturday morning were: E. B. Sterling, S. B. Wardwell, A. F. Wardwell, R. J. Buck, C. H. Anthony, O. A. Miller, W. C. Stebbins, D. M. Cosgrove and John A. Remington. The directors have elected Samuel B. Wardwell president. He is the secretary and treasurer of the West End Paper Company of Carthage, and Mr. Miller is vice-president of the Carthage company, with E. E. Sterling president.

The deal has been in progress for some time, and for the past several days has been in the final process of closing.

A new modern plant will raise itself out of the ruins of the Aldrich Paper Company and by next spring it will be producing fifty tons of news print paper a day, under plans already perfected by the new owners of the property. Plant and specifications have already been drawn by Charles E. Eaton of the Trust Company building, hydraulic and mill engineer, and copies have been sent out to contractors. If bids are satisfactory and materials are available, construction will be started at once and the plant will be ready for operation about April 1.

The main building, or machine room, will be erected on the site of the mill that burned at Natural Dam a few years ago. It will be a brick and steel structure 200 x 75 feet of one story and basement design. A Fourdrinier paper machine 164 inches wide will be installed to make paper at a rate of 700 feet a minute.

Other buildings in the plant include a finishing room 45 x 128 feet in dimensions, made of steel and concrete; a shipping room 42 x 45 feet, of brick and steel; a boiler house 44 x 45 feet, of steel and brick, and small structures for storage of coal and pulp.

The new boiler house will be modernly equipped with mechanical stokers, overhead bins with tracks above for unloading coal cars direct into bins of 1,200 tons capacity. A new radial brick stack 175 feet high with six feet inside diameter will be erected.

The sulphite mill, which was also destroyed by the fire, will not be replaced this year, it is said. The ground wood mill has been partially rebuilt and is in operation, but under present plans it will be rebuilt with the installation of new turbines and grinders. The power plant will be improved and new machinery will be placed in the pulp mill, giving it a capacity of twenty-five tons of ground wood a day. There is also a pulp mill at Emeryville with a capacity of thirty-five tons a day, and this is to be remodeled later.

The company owns about 5,000 horsepower in the two plants. There is also a considerable tract of timber near Aldrich and Newton Falls from which the company draws pulpwood and floats it down the Oswegatchie river to the mills.

The new owners are prepared to proceed at once to convert the property into a progressive paper manufacturing concern.

MICHIGAN SUPERINTENDENTS REELECT FORMER OFFICERS

Clyde E. Nicely, of the La Salle Paper Co., of South Bend, Is Named Temporary Chairman of Division of Board Mill Superintendents with Headquarters in Chicago—Superintendents Plan to Form a Division at Holyoke Including Mills in Massachusetts, Vermont and Connecticut—Central Paper Co. of Muskegon, Mich., Announces Building Program to Enlarge Capacity 100 Per Cent.

[FROM OUR REGULAR CORRESPONDENT]

KALAMAZOO, Mich., September 25, 1922.—All officers were re-elected at the annual meeting of the Michigan Division of the American Pulp and Paper Mill Superintendents' Association, held Thursday evening at the Park-American hotel. The hold overs are: Chairman, N. M. Brisbois, Sutherland Paper Company, first vice-chairman; Edward H. Gilman, Bryant Paper Company, second vice-chairman; Michael Redmond, Kalamazoo Paper Company, third vice-chairman; C. W. Ullrich, Wolverine Paper Company, Otsego secretary, George Pountain, Allied Paper Mills.

It was also decided to have an official program committee to assist the chairman in the preparation of the year's activities. That committee includes: Clarence Harter, Rex Paper Company; Jacob Parent, Western Board and Paper Company; Frank A. Johnson, Allied Paper Mills.

One plan favored is to make a really constructive question box a feature of this year's meetings. General discussions along all practical lines will be encouraged.

Plans for the expansion of the national association were given by Edward T. A. Coughlin, who attended the meeting of the executive board of the American Pulp and Paper Superintendents, held Sunday in Chicago.

"A division of board mill superintendents, with headquarters in Chicago and to be known as the Chicago division, is to be formed," said Mr. Coughlin. "Claude E. Nicely, of the LaSalle Paper Company, South Bend, has been named temporary chairman. His assistants are Charles Rainey, of the Midwest Box Company, and Lee Wilson. This division will include mills in Illinois, Indiana and Iowa.

"We will also form a Pennsylvania division. That work is in charge of John A. Bowers, of the Hammermill Paper Company, Erie, Pa.

"The mills at Niagara Falls and Buffalo have been transferred to membership in the Canadian division. There will be two sections in the Canadian branch, the eastern at Montreal and the western at Toronto. Peter Massey, national treasurer of the organization, plans to assist in the reorganization and development of the eastern Canadian division.

"We also plan to form a division at Holyoke, Mass., including mills in Massachusetts, Vermont and Connecticut. We believe there is a field here for a very powerful branch, though that depends somewhat on the attitude of American Writing Paper Company executives and other mill heads in that section."

Mr. Coughlin after the meeting stated that he plans to be active in the organization of the Holyoke division. He will be assisted in this work by Miss Pearl C. Barrett, national secretary, who is now writing personally to all superintendents in that territory, outlining to them the advantages of the organization.

Michigan division members are planning to attend the session of the Technical Association of the Pulp and Paper Industry, October 6 and 7, in Detroit.

Pusey & Jones Building Unique Paper Machine

A paper machine, every part fully equipped with ball bearings,

the first of its kind manufactured in America, is now being turned out by Pusey & Jones, Wilmington, Del.

Preliminary details of the new machine were disclosed at an informal talk, given by H. J. McDowell, of the Pusey & Jones sales department, a recent visitor to Kalamazoo.

"We are not prepared to give any extended detail account of the new machine until it has been fully tested," said Mr. McDowell. "We are all interested in saving power, which means coal. We believe this machine will show a reduction of 80 per cent in power. In a recent test, a 12,000 pound dryer was moved at a pressure of about 10 pounds.

"This machine is for the Chester Paper Company and will be used in the manufacture of tissue paper."

Mr. McDowell also stated that he believed the day of the high speed machine is passing. He placed the future limit at 700 to 800 feet. He gave it as his opinion that the cost of operating high speed machines is too great.

Central Paper Co. Making Improvements

The Central Paper Company, of Muskegon, announces a building and improvement program for the immediate future, which, it is claimed, will increase the capacity of the plant fully 100 per cent in the next 12 months.

While all details are not announced, it is understood the present mill is to be enlarged by the erection of several additions and the installation of the latest type of machinery. A new boiler and power house are also to be included. The company will generate its own electric power. Officials of the company state that from 600 to 700 hands will be given employment as soon as the new mills are completed.

The Central Paper Company was located in Muskegon 22 years ago, with a daily output of 12 to 15 tons. This has since been increased to 60 tons daily and is to be doubled. The company owns its own boats, used for the transportation of groundwood and wood pulp timber.

General News of the Trade

George P. Wigginton, president of the Kalamazoo Loose Leaf Binder Company, has been chosen county chairman of the Republican committee. Mrs. F. M. Hodge, wife of F. M. Hodge, president of the Kalamazoo Paper Company, is vice-chairman.

Fire in the stock house of the MacSimBar Paper Company, Otsego, took two hours to subdue. While but a small hole was burned in the roof, the loss by water amounts to several thousand dollars.

James L. Hunt, employee of the King division of the Allied Paper Mills, sustained a broken leg, due to a fall from the second to first floors.

The Northern Paper Mills, Green Bay, Wis., and Ontonagon, Mich., have filed articles with the secretary of state, at Lansing, announcing an increase in capital stock.

"The Frances," \$150,000 motor auxiliary yacht, property of G. H. Wood, president of the River Raisin Paper Company, Monroe, was recently destroyed by fire, while docked near the Monroe Yacht Club. It was 118 feet long, 40 feet beam and carried a crew of nine men. There were accommodations for ten people in the after cabins.

Bertrand Hopper, secretary and general manager of the Kalamazoo Stationery Company, with his family is spending a month at Lake Placid, in the Adirondacks.

A. L. Pratt, president of the Allied Paper Mills, has returned from an extended trip to Pacific Coast points. He combined business with pleasure, visiting the trade in San Francisco, Portland, Seattle and other cities.

A. H. Gilman, vice-president of the Allied Paper Mills and in direct charge of sales was in New York city during the past week on business.

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CONTINUED IMPROVEMENT IN PHILADELPHIA MARKET

Orders in Individual Instances Are Somewhat Larger Than They Have Been and Buyers Are Showing More Disposition to Anticipate Their Wants—Paper Men Hold Interesting Golf Tournament at the Merion Cricket Club—Whitaker Paper Co. to Open Warehouse October 1 at 26 North Fifth Street in the Very Heart of the Philadelphia Paper District.

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, September 26, 1922.—The trade attributes the steady and to some extent decided increase in business this week over the preceding to the improved industrial and financial conditions. So far as the paper trade is concerned, it felt the effect of these influences, not only in a larger number of orders, but what is more satisfactory in a slight increase in their average size. The very largest buyers of paper, the big publishers and the leaders in the printing trade, sometime ago foresaw the trend of conditions and they placed their orders accordingly. The increase which came during the past week was from the paper buyers in moderate amounts and they are merely following in the wake of the more discerning and are placing business in reasonable anticipation of growing demands to come.

Since the month began, at least four of the larger mills, leaders or near leaders in the particular class of papers in which they specialize, have readjusted prices, marking them up, not horizontally, but all along the line and in moderate amounts.

Market demand and mill advances were particularly noticeable in books and these are now from a half cent to a three-quarter cent higher than when September began. Coated papers also have gone up and almost to as large an extent. Cheap sulphite bonds fell into about the same class, so far as increased values are concerned, as book papers. The higher priced bonds advanced slightly. The coarse paper market also is one of advancing prices, but not so general as the fine. Bogus wrappings are in excellent demand and are quoted now at from one half to three-quarter cents higher than they were at the months beginning and from 75 to 100 per cent higher than they were at the ebb of prices some months ago. Tissue and wax paper production have gone on so steadily and so much faster than demand that supplies of these grades are now plentiful and the price is tending toward weakness. Krafts remained during the week unchanged from the advances on the No. 2 grades which took place during the preceding week and the slight decrease on one of the brands of the No. 1 grade, which also then was announced. In a general way, the coarse paper market is now showing a strength and healthiness in tone as against a rather uncertain, although hopeful condition earlier in the month.

Paper Stock Market Easier

The market for paper stock was little changed last week, mill demand easing off a trifle, but not to such an extent as to effect values—a fact which probably can be explained by the rather limited quantities which are coming into the warehouses of the larger packers and the keen competition which now exists among them and which has resulted in the offering of higher prices to those having stocks of waste paper on hand than have been made at any time this year. An influence of importance in this competition has been the organization of the Waste Paper Division of the Typothetae of Philadelphia. Members of the Typothetae in many cases changed from the stock dealer with whom they had been having business relationship for years in order, through their loyalty to the Typothetae, to give the new system a tryout. There followed, therefore, a realignment of dealers and customers, the former bidding

against the other in order to secure new connections to take the place of those which had been lost.

Though the Waste Paper Division of the Typothetae was at its inception hopeful of being able to work up a larger tonnage than it now has, the officials conducting it still express their satisfaction with its operation. There were completed during the week the figures for August collection by the Division showing an aggregate of over 90,000 pounds as against about 75,000 pounds for July. With the increase of business, this month, it is expected that the September record will exceed 100,000 pounds.

Paper Men Play Golf

The annual golf tournament of the Paper Trade Association of Philadelphia was played on Tuesday and Wednesday of last week on the West Course of the Merion Cricket Club near Ardmore, Pa., a site of magnificent distances and one which, because of its hazards, brought out the best playing qualities of the rather limited number who were able to attend. Both days were cool and pleasant and the tournament therefore almost was ideal. Good fellowship reached its high water mark at the clubhouse on Tuesday evening over which E. Weißenmayer of the Jessup & Moore Paper Company was appointed toastmaster. Everyone made addresses, but they were all entirely informal. On Tuesday morning the players qualified in four eights and following this elimination process, the afternoon was given over to the first round of match play. On Wednesday morning there followed the semi-finals and in the afternoon the final round. Harry F. Donahue, of the Molten Paper Company and of the Aronmink Golf Club, won the low net prize with a score of 72, also having the low gross of 80, but the Association offered no prize for that for the reason that in order to place all on terms of equality, prizes were offered only for the low net records. In the kickers' handicap three of the players tied with net scores of 74, these being Norman Bardeen, of the Lee Paper Company; E. A. Weißenmayer, of the Jessup & Moore Paper Company; and Kit S. Warner, of John F. Sarle, New York.

The feature of the play of the first eight was a twenty-one hole contest as against the regular eighteen and in this Alexander Calder, of the Union Bag and Paper Corp., won out over W. H. Anders, of the Perkins-Goodwin Company, New York. In the second eight W. D. Judd, of Hampshire Bond fame won from Eugene W. Fry, of the Jessup & Moore Paper Company. In the finals on Wednesday Mr. Calder won the championship after a battle with H. A. Earle, manager of the New York branch of the Whiting-Patterson Company. This contest was particularly keen and in order to decide it, the game progressed to twenty-one holes before Calder whose national rating is four, could be greeted as victor. The complete score for the qualifying rounds and the summary for the final follows:

	FIRST EIGHT		Total
H. F. Donahue, Philadelphia.....	43	37	80
Roger Taft, New York.....	41	40	81
Alex Calder, New York.....	45	41	86
H. A. Earle, New York.....	40	46	86
F. W. Westlake, New York.....	42	46	88
W. H. Anders, New York.....	46	42	88
Louis Calder, New York.....	45	46	91
E. A. Weißenmayer, Philadelphia.....	47	44	91
	SECOND EIGHT		
E. W. Fry, Philadelphia.....	46	45	91
W. D. Judd, Holyoke, Mass.....	46	48	94
B. C. Hill, New York.....	44	51	95
Harrison Starr, New York.....	50	46	96
C. H. Morian, Philadelphia.....	49	47	96
Fred Burkhardt, Holyoke, Mass.....	48	48	96
W. E. Perry, Springfield, Mass.....	48	49	97
S. A. Benedict, Philadelphia.....	47	55	102

(Continued on page 22)



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BIRD WATER FILTER

CONTINUED IMPROVEMENT IN PHILADELPHIA MARKET

(Continued from page 20)

THIRD EIGHT

Arthur B. Sherrill, Philadelphia....	50	53	103
Norman Bardeen, Kalamazoo, Mich....	53	51	104
Wm. J. Boyd, Philadelphia....	54	50	104
Kit S. Warner, New York....	54	50	104
Wallace M. Weeks, Fulton, N. Y....	58	48	106
Wm. H. Holden, New York....	50	57	107
R. P. Murray, New York....	53	54	107

FOURTH EIGHT

Allen E. Whiting, Philadelphia....	55	54	109
J. L. N. Smythe, Philadelphia....	54	56	110
S. L. Willson, St. Louis....	55	58	113
W. D. Pringle, Philadelphia....	54	60	114
Geo. Cadwell, Holyoke....	57	63	120
I. F. Megargee, Philadelphia....	70	61	131

The first round of match play resulted as follows:

H. A. Earle, New York, defeated H. F. Donahue, Philadelphia, 4 and 3.

Roger Taft, New York, defeated Louis Calder by default.

Alex Calder, New York, defeated W. H. Anders, New York, one up, 21 holes.

E. A. Weihenmayer, Philadelphia, defeated J. Westlake one up.

SECOND EIGHT

W. D. Judd, Holyoke, Mass., defeated E. W. Fry, Philadelphia, one up, 19 holes.

W. E. Berry, Springfield, defeated C. H. Morian, Philadelphia, 2 and 1.

F. Burkhardt, Holyoke, Mass., defeated B. Hill, New York, 5 and 4.

Harrison Starr, New York, defeated S. A. Benedict, Philadelphia, 6 and 5.

THIRD EIGHT

Wallace M. Weeks, Fulton, N. Y., defeated Kit Warner, New York, 3 and 2.

R. A. Wright, Springfield, Mass., defeated R. P. Murray, New York, two up.

W. J. Boyd, Philadelphia, defeated Norman Bardeen, Kalamazoo, Mich., 2 and 1.

W. H. Holden, New York, defeated A. B. Sherrill, Philadelphia, 2 and 1.

FOURTH EIGHT

S. L. Willson, St. Louis, defeated I. F. Megargee, Philadelphia, 3 and 1.

A. E. Whiting, Philadelphia, and George Cadwell, Holyoke, Mass., byes.

J. L. N. Smythe, Philadelphia, defeated W. D. Pringle, Philadelphia, 5 and 3.

The final summaries follow:

First eight, semi-finals.—H. A. Earle, New York, defeated Roger Taft, New York, one up 19 holes.

Alex Calder defeated E. A. Weihenmayer, 5 and 3.

Final.—Calder defeated Earle, 1 up, 21 holes.

First beaten four, semi-finals.—L. Calder, New York, defeated H. F. Donahue, New York, 1 up; W. H. Anders, New York, defeated F. Westlake, Philadelphia, by default.

Final.—Anders defeated Calder by default.

Second eight, semi-finals.—W. D. Judd, Holyoke, Mass., defeated W. E. Perry, Springfield, Mass., 2 up; F. Burkhardt, Holyoke, Mass., defeated H. Starr, New York, 4 and 3.

Final.—Burkhardt defeated Judd, 1 up.

Second beaten four, semi-finals.—C. H. Morian, Philadelphia, de-

feated E. W. Fry, Philadelphia, 1 up; B. C. Hill, New York, defeated S. A. Benedict, Philadelphia, 1 up.

Final. Morian defeated Hill, 1 up.

Third eight, semi-finals.—W. M. Weeks, Fulton, N. Y., defeated R. A. Wright, 3 and 2; W. H. Holden, New York, defeated W. J. Boyd, Philadelphia, 4 and 3.

Final.—Holden defeated Weeks, 7 and 6.

Third beaten four, semi-finals.—K. S. Warner, New York, defeated R. P. Murray, New York, 1 up; A. B. Sherrill, Philadelphia, defeated Norman Bardeen, Kalamazoo, Mich., by default.

Final.—Sherrill won from Warner by default.

Fourth eight, semi-finals.—S. L. Willson, St. Louis, defeated A. E. Whiting, Philadelphia, 2 up; George Cadwell, Holyoke, Mass., defeated J. L. N. Smythe, Philadelphia, 3 and 2.

Final.—I. F. Megargee, Philadelphia, won from W. D. Pringle, Philadelphia, by default.

Whitaker Paper Co. to Open Warehouse

The long anticipated move of the Whitaker Paper Company opening a Philadelphia warehouse is about to be realized and on October 1 it will throw open the doors of the building at 36 North 5th street in the very heart of the Philadelphia paper trade world. Whether the executive offices, now located in the Crozer Building at 15th and Chestnut streets, will be removed to the new location was not announced, although it is believed that for the present at least they will not be changed. Advent of the Whitaker Company into this market in an aggressive way had been the subject of trade speculation for years before the company actually opened a Philadelphia office maintained, however, as a branch of the headquarters for this district in Baltimore. Stocks were carried in Baltimore and were shipped here. Now, however, the further move of a Philadelphia warehouse is to be made. The new location brings the Whitaker Company directly into the paper center. The building is a three story and attic structure of brick and is of fair size.

Building for Paper at World's Fair

The world's best offerings past and present in paper making, its conversion into printed, engraved and lithographed matter, and into its manifold other uses are to be assembled for the first time in the history of world's fairs, in a separate building and under on roof at the Philadelphia Sesqui-Centennial to be held in this city in 1926. Formal statement of this purpose was made during the week by Secretary Manager Franklin W. Heath of the Typothete of Philadelphia, upon receipt by him of an identical set of resolutions approved by both the national and the local bodies of all the industries encompassed in the broadest interpretation of the term the graphic arts. The Philadelphia Sesqui-Centennial Committee organization having now been completed by the appointment of a Director General, Chief Engineer and Chief Architect, the Philadelphia Graphic Arts Committee felt that the time was opportune for making a public statement of its plan and to that end there were given out copies of the resolutions adopted and the personnel of the temporary committee in charge of the project. While in other world's fairs the processes and the products of the graphic arts industry were scattered through many buildings, making a comprehensive and a comparative study almost impossible, it is proposed in the Philadelphia Sesqui-Centennial to aggregate all in a Temple to the Graphic Arts, wherein shall be made the paper for the daily newspaper, descriptive of the day by day developments in the big show, and which is to be used as headquarters for visiting newspaper men and all interested in any way in paper manufacture or paper conversion. It is understood that exhibitors at the recent exposition in Roston agreed not to

(Continued on page 24)

FOR QUALITY PAPERS USE

A-1 BLEACHED SULPHITE PULP

MANUFACTURED BY

Kellner-Partington Paper Pulp Co., Ltd.

Borregaard

Norway

SOLE AGENTS FOR U. S.

J. Andersen & Co.

21 East 40th Street

New York, N. Y.

WAYAGAMACK

KRAFT PULP

*Uniform in Quality
Essential for Strength Requirement*

The Pulp and Paper Trading Company

21 East 40th St., New York, N. Y.

Sole Agents for United States for
CANADIAN KRAFT, Ltd. **Three Rivers, Canada**

CONTINUED IMPROVEMENT IN PHILADELPHIA MARKET

(Continued from page 22)

participate in any other exhibition until the Philadelphia Sesqui-Centennial in 1926. Prospectively, therefore, the Temple of the Graphic Arts and its contents will have an importance not possible under any other conditions.

The resolution adopted by the National Paper Trade Asso. and The Phila. Paper Trade Asso., follows:

Whereas, The printing and publishing industry has made most remarkable strides, not only in the past one hundred and fifty years, but particularly the last fifty years; and

Whereas, This development has been quite as remarkable in all forms of advertising, engraving, lithographing, bookbinding and allied trades; and

Whereas, There will be held in Philadelphia during 1926 a Sesqui-Centennial Exhibition of progress, celebrating the one hundred and fiftieth anniversary of the signing of the Declaration of Independence, and

Whereas, This will bring people from all parts of the world to see the best in arts and science;

Therefore be it resolved, that The National Paper Trade Asso. promises its hearty support to this exhibition and recommends that one of its principal buildings be called the Graphic Arts Building, in which will be concentrated all exhibits showing the development in advertising, printing and publishing, engraving, lithographing, as well as the best products of the crafts associated in this industry, such as paper, ink, printers' supplies, novelties used in direct-by-mail advertising, et cetera. It is suggested that this building be used as headquarters for the newspaper and periodical profession and provision made for their activity and comfort. It is also suggested that all official publications of the Sesqui-Centennial be issued from this building and under the direction of the Publicity Department.

It is further resolved that, The National Paper Trade Asso. urge its members to give their fullest co-operation in making the exhibition and the Graphic Arts Building a complete success;

Be it further resolved, that a copy of these resolutions be forwarded to the Sesqui-Centennial Committee representing the Graphic Arts of Philadelphia for them to present to the proper Sesqui-Centennial authorities.

The local committee in charge is as follows:

Typothete of Philadelphia, Charles W. Beck, Jr.; Photo-Engravers Asso., Charles W. Beck, Jr.; Public Ledger, Charles Tyler; Philadelphia Inquirer, Edward J. Bacon; North American, Jas. P. Considine; Phila. Record, Rowe Stewart; Evening Bulletin, Wm. Winton; Craftsmen Club, Hubert S. Foster; Phila. Stationers Asso., Frank R. Welsh; Poor Richard Club, Charles A. Stinson; Booksellers Association, Peter Reilley, Better Business Bureau, Elwood Russell; Electrotypers Association, Adam Suelke; Paper Trade Association, Allen E. Whiting; Lithographers Association, Harrison K. Caner; Engravers Club, W. W. Blaisse.

The resolutions have been adopted by the following Graphic Arts Organizations: National Bodies, United Typothete of America, National Paper Trade Association, National Association Printing Ink Manufacturers, National Lithographic Asso., National Asso., Printing House Craftsmen, International Electrotypers Asso., Asso. of Business Papers, American Institute of Graphic Arts. Local: Typothete of Phila., Phila. Stationers Asso., Phila. Paper Trade Asso., Greeting Card Asso., Poor Richard Club, Phila. Club Printing House Craftsmen, Phila. Photo-Engravers Asso., Bookbinders Asso. Electrotypers Asso., Engravers Club, and all the Philadelphia daily newspapers save the Bulletin.

General News of the Trade

John J. Costello and Peter DiBiao, trading as the National

Wiping Cloth Company, of Philadelphia, will dissolve partnership on October 1 and Mr. DiBiao will continue the business under the old name and at the old location. Mr. Costello has joined the force of the Penn Paper and Stock Company of which William J. McGarity is proprietor and the Penn Company has opened a new department, dealing in new and old sanitary wiping cloths with Costello in charge.

A. Clarence Holland, general manager for Sylvester S. Garrett, coarse papers, Third and Spruce streets, has returned from a visit to the New England mills. F. A. O'Neill, head of the Franklin Paper Company, has sold his property at Magnolia and Woodlawn streets, Germantown, and has purchased another on Pelham Road into which he removed during the week upon the return of his family from Chelsea, where they spent the summer.

Announcement comes from Huntingdon that Pittsburgh capitalists have purchased thousands of acres of timberland on the property of the Rockhill Coal and Iron Company and that scores of men will be employed for the next four years in cutting the timber, in what is said to be the largest project of its kind in the history of the county.

Harry Conrad, one of three brothers on the sales organization of the D. L. Ward Company, has resigned his position in order to accept another on the sales force of the Garrett-Buchanan Company.

Contending that an employee of the Barrett Company, manufacturer of roofing and tarred products, died from the effects of sleeping sickness and not from the affect of chemicals inhaled in the course of his work, physicians for the company last Friday induced the workmen's compensation board to reserve decision on a claim for compensation. The claim was made by Mrs. Henrietta C. King, of Andalusia, near Philadelphia, whose husband died a year ago in the Frankfort Hospital two days after being seized with convulsions. He was employed as a welder by the Barrett Company.

The Wilcox, Walter, Furlong Paper Company, 231 Chestnut street, is installing a 35-inch cutter of the Diamond style.

The property of the Gatti-McQuaid Company, paper mill supplies, 606 North American street, is included in the assets of the embarrassed company and for that reason an ancillary receiver, John B. Johnston, has been appointed in the United States District Court.

Uncle Dan Bishop, in charge of the information desk in the office of the D. L. Ward Company, has returned from Atlantic City, where, as has been his custom for many years, he led the march of the Shriners on Shriners' Day.

President Norbert A. Considine, of the Paper House of Pennsylvania, is attending the Strathmore meeting.

Among the week's visitors were Alexander Thompson, of the Champion Coated Paper Company, and its vice-president and sales-manager, and Richard D. Rising, of the B. D. Rising Paper Co.

Good Progress on Westminster Paper Mills

APPLETON, Wis., September 25, 1922.—M. F. Herb, one of the organizers and president of the Westminster Paper Mills, Ltd., which is erecting a large tissue mill at New Westminster, B. C., Canada, left this week for the west after spending several weeks disposing of stock to investors in and near Appleton. Appleton stockholders, at a meeting just before Mr. Herb left, elected O. P. Schlafer, a prominent local merchant, as a member of the board of directors of the new company.

Mr. Herb said the company's mills are rapidly nearing completion and that paper manufacture will be started next spring. It is the only tissue mill within 2,500 miles. Mr. Herb has been connected with a number of paper mills in the Middle West as superintendent and manager in the last quarter century.



The Beloit Two Drum Winder

Has made a place by
itself on its own merits.

An astonishing list of repeat
orders is its best advertisement.



BELOIT IRON WORKS
BELOIT, WISCONSIN



PAPER DEMAND IN TORONTO SHOWS STEADY INCREASE

Mills Are Quite Busy and Paper Merchants Appear Well Pleased with the Outlook—Prices Show a Stiffening Tendency Particularly in Book and Writing—Long Price List Which Is Now in Effect with the Printing Trade Is Reported to Be Working Out Quite Satisfactorily—Good Progress Is Reported on the Program for Developing Paper Plants at Kenora.

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ontario, September 25, 1922.—Business in the pulp and paper line is increasing steadily with the advent of fall and larger orders are coming to hand. Mills are quite busy and paper merchants appear well pleased with the outlook. There is a tendency to stiffen prices in certain lines, particularly in book and writing papers. It is rumored that an advance may be expected in a few days. The long price list, which is now in effect so far as the printing trade is concerned, is reported to be working out fairly well, although some wholesalers are complaining of the extra work entailed in the office by reason of the system. Representatives of Old Country firms have been visiting Toronto and other cities and taking orders for imitation art paper in large quantities. Coated paper mills are getting busier and manufacturers of envelopes and special lines of Christmas paperies are rushed.

Fall trade generally is looming up exceptionally well. Board manufacturers have been compelled to refuse orders as paper box plants have about all the work they can attend to at the present time and some plants are working over hours in order to get out the material and make deliveries. Toilet and tissue mills are getting their share of business and kraft paper is once more in good demand after a falling off for some time. Manilas are still weak, but fiber papers are having a stronger call. The printing trade is also picking up. The requisitions for news print keep up well and pulp is moving more freely with prices showing an inclination toward stiffening.

New Pulpwood Weights in Force

There have recently come into effect some changes which are both reductions and advances in the estimated weights used on pulpwood. The new scale of weights adopted by the railways is as follows:

Pulpwood Per Cord	Green	Partly Seasoned	Dry
Balsam, Rough	4,500	R4,000	R3,500
Peeled	R4,200	R3,600	R3,000
Spruce, Rossed	4,800	4,200	3,600
Peeled	4,000	3,500	3,000
Poplar, Rough	4,500	3,900	A3,300
Peeled	4,500	3,900	R3,200
Hemlock, Rough	A4,800	A4,200	3,600

R—Reduction A—Advance.

New System of Measuring Timber

An important conference was held recently at the offices of Hon. Beniah Bowman, Minister of Lands and Forests for Ontario, in an effort to reach a standardization of measuring and culling timber. The Crown Land timber agents for the province were present, and it was stated that the gathering did not mean any action in regard to the Doyle rule, the abolition of which has been recommended by Judson F. Clark, forestry expert, who advocates selling wood on a cubic content basis instead of the estimated product in board feet.

Good Progress on Kenora Plants

E. W. Backus is carrying out an extensive building program in

and around Kenora, Ont. Two million dollars will have been spent by next November at Rideout Bay, Lake of the Woods district, by the syndicate headed by Mr. Backus. This is the beginning of a projected production of paper greater than the world has yet seen from any single plant. This year the company intends to develop an 80-ton pulp mill unit, next year from 100 to 150 tons of news print paper and each succeeding year to keep adding to the manufacturing capacity of the plant until a total of 1,000 tons of news print per day has been reached. The additional electric power with which to manufacture the paper will be supplied from the proposed power development at White Dog rapids. The object of the work being done by the Backus-Brooks company on the east branch of the Winnipeg River is the furnishing of the necessary power with which to operate the first unit of the paper mill now being built in the Rideout district. At the time the municipal light plant was built, only four generating machines were installed with a capacity of 3,500 horsepower. When this plant was taken over by the Backus-Brooks company it was with the idea of widening out the channel to give sufficient flow of water from which to develop some 8,000 horsepower.

Brampton Firms Report Good Orders

Gummed Papers, Limited, Brampton, report having had a very successful season so far and say that the prospects for fall business are good and that customers seem to be needing more goods than they have for some time. The Brampton Paste and Gum Company also state that business with them has been steadily improving and that they are now manufacturing paste for the use of paper mills, paper box makers and various other lines. The outlook for fall is much better than it has been.

Must Show Country of Origin

Toronto paper merchants have received word from Ottawa that on and after November 1, printed and lithographed matter of all kinds including books and pictures and also wooden or fiber lead pencils imported into Canada must be stamped in such a manner as to indicate the country of their origin. Regulations to this effect have been passed by the government as provided for in the last session amendment to the Customs Tariff Act.

Port Arthur Man Gets Pulpwood

W. T. McEachren, of Port Arthur, was the successful tenderer on the seventy square miles of burnt timber disposed of during the past week by the Ontario Department of Lands and Forests. The limits sold are partly in the Nipigon Forest Reserve near Jellicoe and partly in Nezah on the C. N. R. The bid calls for payment of \$7.50 per thousand for pine, \$5 for spruce, \$4 for other timber and \$1.20 per cord for pulpwood. The sale is the largest made by the department for some months. The limit is rich in pulpwood and a large amount will be taken out this fall and winter.

Notes and General Jottings

R. I. Finlay of the United Paper Mills, Toronto, who has been spending a vacation at his new summer home in Oakville, has returned.

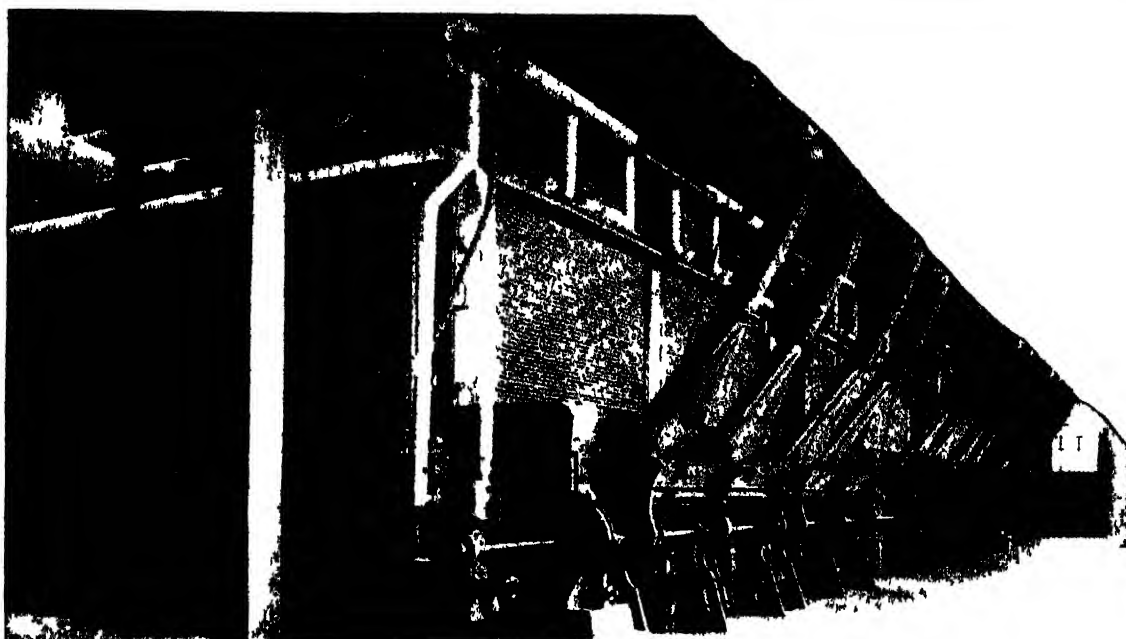
It is expected that the cut of pulpwood in Northern Ontario will be larger this season than for some time. Labor is reported to be scarce at many points and wages are about 25 per cent higher than they were at this period last year. The demand for pulpwood is improving somewhat.

F. Mackey Resigns From J. Spaulding & Son Co.

[FROM OUR REGULAR CORRESPONDENT]

TONAWANDA, N. Y., September 25, 1922.—F. Mackey has tendered his resignation as superintendent of the new paper mill of J. Spaulding & Sons Company, Inc., here. Mr. Mackey has not announced his plans for the future but will leave soon for Newark, Del.

FOR INCREASED FUEL ECONOMY



Can your boiler room strengthen your profit margin?

WHERE manufacturing costs are excessive, a large part of the blame can generally be traced to the boiler room. No other part of the average plant offers such opportunities to improve methods and equipment, increase efficiency, and effect substantial savings at so small a cost.

Foremost in importance are the boilers themselves. Stokers, forced draft, meters and recorders can accomplish but little unless the boilers are correct and eco-

nomical in design and construction.

Edge Moor Water Tube Boilers are designed to convert the highest possible number of heat units in each ton of coal into usable power. Many plant owners have found it highly profitable to replace their old, inefficient boilers with Edge Moors. Their record of savings extends over a period of several decades.

Where shall we send you detailed information?

EDGE MOOR IRON COMPANY

EDGE MOOR, DELAWARE

*New York — Chicago — Boston — Pittsburgh
St. Paul — Charlotte*



EDGE MOOR Water Tube BOILERS

PAPER MILLS IN NEW ENGLAND UNEASY OVER COAL SUPPLY

British Coal Is, However, Available Now at Lower Prices and Has Helped to Keep the Situation from Becoming More Critical Paper Boards Continue to Increase in Price—Owing Probably to Heavy Demand from Board Mills Prices for Waste Paper Are Appreciating—Heavy Imports of Paper and Paper Goods from Abroad Are Reported in Boston Market.

[FROM OUR REGULAR CORRESPONDENT]

Boston, Mass., September 25, 1922 Shipments of coal being delayed by shortage of cars and other delays are causing considerable uneasiness among New England paper mills, according to the reports obtained from Boston paper merchants. British coal, being received in large quantities in both this city and at Portland, Me., has in a greater or less measure saved the situation for the New England paper manufacturers. Prices paid for the British coal have taken a decided drop within the past week and paper manufacturers are paying \$1 or more less than they did only a short time ago, many of them paying as low as \$12 and \$11 for the imported coal.

Paper Prices Advancing

The general advance in paper prices is the feature in the market. This situation holds true particularly in the paper board market, as New England mills are reported as being able to supply practically nothing in the board line because of being sold in advance practically up to their limit of productive capacity.

New England box makers, according to Boston merchants, are even obliged to purchase some stock from outside mills at as high a price as \$60 delivered to their plants. Folding boards are even scarcer than chip and news grades, Boston merchants report.

The coal situation is one of the biggest propositions which the New England mills have to contend with, it is stated on good authority. Very few of the New England manufacturers are reported as having coal contracts for their winter supply and the majority of the manufacturers have to depend on the mercy of the dealers, buying their coal on the open market at the best price they can obtain. None of the mills have been forced to shut down as yet because of the shortage of coal and the low reserve fuel.

Waste Paper Prices Uncertain

Prices in the waste paper market are still uncertain, being rather on the rampage, owing in the main, probably, to the heavy buying on the part of the board mills who have been buying up supplies because of capacity production. Instead of the prices of between \$13 and \$15 which were quoted for folded news and mixed paper less than ten weeks ago the price here has jumped to between \$22 and \$25 at the high peak for the various grades. And even other grades of waste paper have jumped way up, following the lead already established. Boston merchants report that old kraft has been quoted and even sold at as high as \$2.40 with book stock as high as \$3 and hard shavings at virtually the price of bleached sulphite, which has been quoted at \$4.35 by the mills, f. o. b. at the mills.

Paper Imports Increasing

Imports to the local market are increasing because of the present conditions. Receipt of 745 rolls of news print from Hamburg were reported recently as well as nearly nineteen thousand bales of various grades of pulp from Scandinavian mills and 1,200 bales of kraft from the same country.

Exports from the local market worthy of mention, according to Boston merchants, include nearly eight hundred packages of news

consigned to a firm in Havana as well as a large quantity of paper bags and other containers made of paper. New England dealers and Boston merchants are putting themselves out to keep up the development already started in the South American market by the paper merchants of this section.

New Dillon Jordan

The newest piece of machinery manufactured by the Dillon Machine Company of Lawrence is the Dillon Jordan, which so far has proved a big success, and the firm reports encouraging orders. The machine comes in three sizes and either belt or direct connected motor driven. The firm, which has built paper machinery for years and is well known throughout the paper trade, has made all the bearings on its latest self-oiling, water-cooled and adjustable, and have fitted it with special heat treated steel-bronze or manganese steel plug and shell lining and standard steel knives.

A large stock of rebuilt paper mill machinery, including pumps and calendar, press and couch rolls, are offered to the mills by the Frank H. Davis Company, whose plant is at 175 Richdale avenue, Cambridge. Included in the lot are tissue machines, sheet cutters, rotary boilers, slitters and winders.

Calcasieu Paper Co. to Erect Mill in Louisiana

ELIZABETH, La., September 25, 1922.—The Calcasieu Paper Manufacturing Company is to erect a paper mill here. Headed by R. M. Hallowell, the moving spirit of this community and president and general manager of the Industrial Lumber Company, with its three great sawmill plants, the capital stock of the new paper company, to be capitalized at \$250,000, has been enthusiastically subscribed to and building of the paper mill plant will be begun soon with the hope of having it in operation soon after the first of the year.

The Calcasieu Paper Manufacturing Company will do something that no other paper making plant has done. It will make kraft pulp out of pine stumps and clear the land as it goes for the farmer to come after. The Carter process, a new process of recovering resin and turpentine and making paper from the fiber remaining, the discovery of J. F. Carter, has been adopted by the Calcasieu Paper Manufacturing Company. It is a modified soda process, and the experiments made to date at Elizabeth, covering over two years of tests, have been uniformly successful and gratifying. The turpentine realized by this process is identical, as far as can be discovered, with the true spirit of turpentine. The resin is in liquid form, which can be sold to paper mills for sizing paper and to soap manufacturers who use it in the manufacture of soaps instead of using solid resin. In fact, when solid resin is bought for this purpose it is necessary to reduce it to the same liquid form as produced in the Carter process.

These two products, the resin and turpentine, are obtained by the Carter process from crushed woods, leaving kraft pulp. It is now the intention of the company management to install a tissue paper unit with a capacity of ten to twelve tons a day, for which a ready market can be realized.

Mr. Hallowell hopes and believes that the Calcasieu Paper Manufacturing Company will be but the first of probably several paper mills located at Elizabeth, for around this community is land and stumpage enough to perpetuate from two to a dozen paper mills.

The directors of the Calcasieu Paper Manufacturing Company are: J. F. Carter, O. A. Trollich, S. M. Lee, C. H. Fenstermaker, O. D. Keller, B. F. Smith and R. M. Hallowell, all of Elizabeth, and C. W. Patterson and S. M. Scott, of Oakdale.

Maine Box & Paper Co. in New Quarters

[FROM OUR REGULAR CORRESPONDENT.]

LEWISTON, Me., September 25, 1922.—The Maine Box and Paper Company, has moved into its new factory at Stevens Mills, Auburn.

Established 1886

Results

If we achieve ideal results on our contracts, it is not because we possess any secret formulæ for success, but rather that long study of all the problems involved and actual practice in solving them have given us a gold mine of experience which we can apply to each new problem as it comes along.

M. GOTTESMAN & COMPANY

INCORPORATED

18 East 41st Street**New York, N. Y.****U. S. A.****HOLYOKE OFFICE**

185 Pine Street

STOCKHOLM OFFICE

Stureplan, 13

KALAMAZOO OFFICE

No. 1 Humphrey Block

CONDITIONS IN THE GERMAN PAPER MARKET

[FROM OUR REGULAR CORRESPONDENT]

BERLIN, Germany, September 1, 1922.—The dollar rises from hour to hour and has been bought today with 2,000 marks. The prices of all commodities are swiftly climbing after it. In recent days the manufacturers of the different varieties of paper hold their meetings in Berlin and fix the prices for September. The new prices have not yet been published, but it is rumored that they will almost double. This would be a surprise to the customers, who were prepared for a rise of 40 to 50 per cent only. The rise may be justified by the higher costs of production, but it would have the effect of restricting the home consumption. The cost of living is more than a hundred times higher than before the war, is daily rising, and nobody's income has risen in the same proportion. And as the average German can hardly buy the necessary food for himself and his family, he must economize in all other directions.

Mill Orders Have Not Diminished

Yet, until now, the orders for paper at the mills have not perceptibly diminished; almost all of the paper mills have orders up to the end of the year. But this heavy buying has its principal source in speculation. Every jobber and converter knows that the paper wanted by him will in the next month cost considerably more than today, as the cost of production of the mills must always rise under conditions like the present. Therefore everybody orders as much as he can, and many an individual orders more than he can promptly pay for after receipt. The mills know that and look with some distrust upon their home orders. The mills which wish to retain their old customers make them the concession that they are free to cancel the order if they find the price fixed for a new month is too high. Besides this a new trade custom established between the paper manufacturers and their customers gives the latter ones the right of cancelling whenever the new price exceeds the old one by 40 per cent or more. There exists also a general scarcity of money, and the bankers have very sensibly restricted credits.

Other Industries Require Much Paper

On the other hand all industries are busy and require their regular quantities of tissue and wrapping paper as well as of boards. It is astonishing that also the publishers want almost as much paper as in better times. A good observer among our paper manufacturers believes to have found the reason of it: the working people have turned to be the heaviest book buyers. The newly established Republic with its democratic rules allows them to reach high positions, and they know that they require knowledge if they wish to be prominent, so they buy good books for themselves and their sons. Popular editions of the German classics and popular scientific books have never before appeared in so many copies as now. On the contrary the sale of highly scientific books and of the big dailies has diminished, as the cultivated middle class, their chief buyers, can no more afford to pay for them.

Look After Export Business

These conditions influence the paper manufacturers to look after the export business, the more so, as the world market for paper seems to have strengthened lately, the Scandinavians having apparently ceased to sell paper and pulp without profit. But the export business is by no means an easy one, and now the government plans to raise the export tax against the opposition of the whole German industry.

Thus the market is uncertain in many points, and everybody in the paper business as well as Germany itself, must struggle for existence from one day to the other, mainly in consequence of the breakdown of the mark, caused by the impossible reparation demands of the French and the high costs of the occupying army.

Big Advance in Sulphite

The manufacturers of sulphite pulp will, as they say, raise the price of their products by 150 to 200 per cent, as they must buy the greater part of their pulpwood from foreign countries, because a large portion of the German forests is wanted for the French reparations. The pulpwood from Bohemia has to be paid in the rather high Czechoslovakian exchange, and the pulpwood from Poland in English pounds. In consequence of this rise of the sulphite all papers must rise proportionally. The newspaper mills ask 70 marks for the kilogram of news, that is about three times the August price and 350 times the price before the war. A meeting of the pulp and paper makers and the publishers under the government's auspices will fix the price of newspaper, while the September price of all other papers will be fixed by the paper manufacturers alone later on. They have adjourned their meetings.

News of the Chicago Trade

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, September 25, 1922.—McLaurin-Jones Company, of Brookfield, Mass., has issued through Peabody, Houghteling & Co., Chicago, first mortgage 7 per cent serial gold bonds dated September 1, 1922, redeemable in reverse order at 107½ during the first year and at a premium of ½ of 1 per cent each year following. The company manufactures gummed and coated papers.

W. J. DuBois, of the Moser Paper Company, Plymouth Court and Harrison street, has left the hospital and returned to his home at Oak Park. Mr. DuBois entered the hospital several weeks ago for an appendix operation.

"Bob" Butterworth, manager of the Champion Coated Paper Company, West Washington street, left September 25 to call on the trade in Kansas City and the southeastern section. "Bob" played some golf at Excelsior Springs during his trip and expected to set a record score for the season.

A number of Chicago jobbers are arranging for a meeting of golf enthusiasts that are to be entertained at Milwaukee by the jobbers of that city.

R. B. Little, formerly vice-president of the Dwight Brothers Paper Company and now vice-president and general manager of the new office of Birmingham, Little, Prosser Company, at Kansas City, and "Joe" Birmingham, of Kalamazoo, Mich., left for Kansas City, September 20, to arrange the office of the new company. All the stock has been received in Kansas City and the Chicago office of Birmingham & Prosser reports that the new branch will soon be ready for business.

J. H. Coy of the Flambeau Paper Company announces that business is gradually growing better and the last two weeks have developed good returns. Mr. Coy believes that business in general will be more stable when the strike conditions are settled.

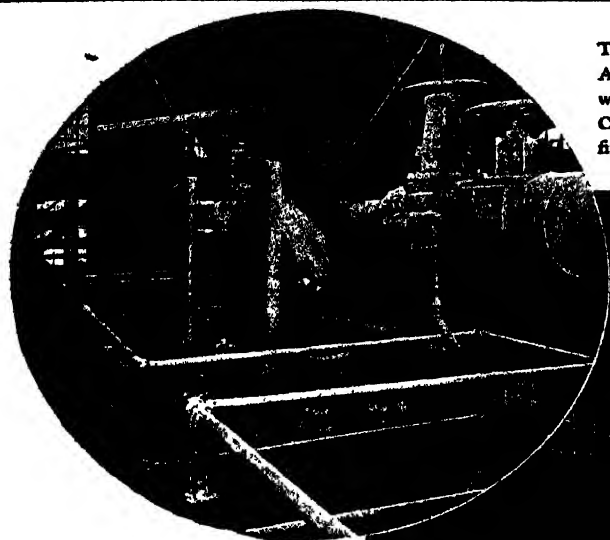
H. G. Prosser, of the Birmingham Prosser Company, 10 South LaSalle street, has been transacting business and estimating conditions at Kalamazoo, Mich., during the past week.

Miss N. M. Ingham, saleswoman of Birmingham & Prosser and who has been with the company since the organization started, is spending a month's vacation at her home in Farmington Falls, Me.

The Schmidt & Ault Paper Company, 111 Washington street, gives notice that the shipments have been arriving with considerably more regularity.

To Manage Seaman Buffalo Branch

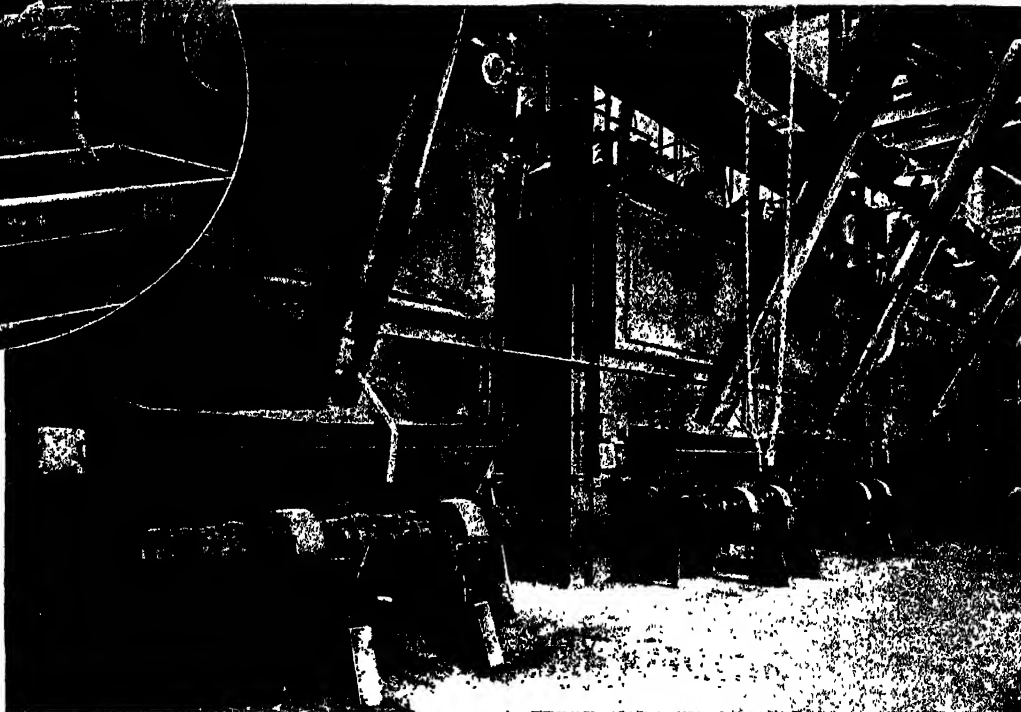
BUFFALO, N. Y., September 25, 1922.—K. C. Franklin has been appointed Buffalo Manager for the Seaman Paper Company to take place of E. W. Butt, resigned. Mr. Franklin has been salesman for the Buffalo Branch of this Company for the past five years.



Top view of boiler and steam connections. Automatic valves admit steam to the main line when it builds up above a predetermined pressure. Conversely, when the pressure falls due to banked fires, the valves cut off the boiler.



Five 518-hp. HEINE H-Type Boilers operating at 125 pounds steam pressure, furnish power, heat and steam for processing. Crushed bituminous coal is fed to Riley underfeed stokers.



Another modern plant installs HEINE Boilers •

THE Haverhill plant of the Robert Gair Company, where paper and box-wood are made, uses steam for power and heating.

Five 518-b.hp. HEINE H-Type Boilers have been operating there for five years and in a satisfactory manner. The three top and three bottom rows of tubes are washed every five weeks and all tubes twice a year. This has been found to be good practice and the tubes are in excellent condition.

Clean heating surface means long boiler life and better fuel economy. How often to clean a boiler depends upon local conditions of fuel and water.

HEINE *Advantages*

A feature of HEINE H-Type construction is the convenience of cleaning. Soot and dust are blown from tubes by a series of steam nozzles provided with every boiler. A number of tubes can be washed out by the removal of only one hand-hold plate. Ability to clean from the ends characterizes HEINE H-Type installations. It is possible to erect a solid bank of boilers without alleys between them. HEINE Boilers are the natural choice for industries seeking performance with economy.

Heine Boiler Company
SAINT LOUIS, U.S.A.

Obituary

Allen A. Wheat

KALAMAZOO, Mich., September 23, 1922.—Allen A. Wheat, one of the best known papermakers in America, died at Petoskey, Mich., where he was acting as manager of the Northern Michigan Pulp Company. He has been in poor health for two or three years, being forced to take protracted rests at various periods. He has been showing improvement lately and only the day before his death attended the review of a Knights Templar drill squad.

Mr. Wheat began his career in the paper industry with the Agawam Paper Company, Mittenague, Mass. He resigned the superintendancy of that concern to accept a similar job with the Sterling Paper Company, near Hamilton, Ohio. After a year in the Miami valley he returned to Mittenague and superintended the construction of the first unit of the Strathmore Paper Company. He spent about six years with that concern.

He then came to Kalamazoo as general superintendent of the Kalamazoo Paper Company, also spending six years with that concern. He then formed the Wheat Paper Company, at Elkhart, Ind., and served as manager until the plant was taken over by the Lincoln Paper Company. He then became associated with the Northern Michigan Pulp Company, a position he has since held.

Mr. Wheat was a Mason and Odd Fellow and actively interested in educational matters while a resident of Kalamazoo. He is survived by his widow and three sons. The funeral took place in Kalamazoo. The pall bearers were his former business associates.

John H. de Morainville

KALAMAZOO, Mich., September 23, 1922.—John H. de Morainville, 39 years old and secretary treasurer of the Hoskins-Morainville Paper Company, Menominee, Mich., is dead. He was a victim of pneumonia.

Congratulate Mr. Harding on Bonus Veto

Inasmuch as the members of the American Paper and Pulp Association had indicated by a referendum vote some time ago their opposition to the soldier bonus as an uneconomic move, Dr. Hugh P. Baker, executive secretary of the association, as soon as he knew that President Harding had vetoed the bill, sent to the Senators of the paper-making states a telegram asking them to uphold the veto. His telegram was as follows:

"American Paper and Pulp Association, representing paper manufacturers from Maine to California, believe that President Harding has taken an absolutely sound stand in his message vetoing the bonus bill. Manufacturers are already carrying a tremendous burden with the increasing prices of raw materials and promise of increased labor costs. We urge that you sustain the President's veto."

Dr. Baker, who was himself a soldier, being a captain of infantry, also sent a telegram of congratulation to President Harding, as follows:

"Manufacturers of paper throughout the country, represented in the American Paper and Pulp Association, congratulate you on your veto of the bonus bill. We believe the position you have taken is absolutely sound and for the benefit of the business interests of the country."

To Stabilize Coal Situation

WASHINGTON, D. C., September 25, 1922.—The Chamber of Commerce of the United States set in motion last week plans under which American business and industry, co-operating with the Government, will attempt to stabilize the coal situation.

The Chamber's efforts in this direction follow the coal conference of last week, called by Secretary Hoover, at which Mr. Hoover and the organizations represented at the confer-

ence, requested the Chamber to undertake responsibility for a definite campaign looking to a solution of the present coal problem.

The program of the Chamber contemplates co-operation on the part of national business associations, local chambers of commerce and individual corporations and firms in an attempt to equalize and expedite the distribution of coal and to prevent prices from soaring to undue levels. The railroads have assured Mr. Hoover that they will do their part by hastening transportation.

Full co-operation by all concerned the Chamber declares will relieve the federal and state governments of increasing regulatory legislation; and will be welcomed by the Administration as offering a promise that business itself will solve its problems without injection of government into its affairs.

John J. Dooley Appointed Traffic Manager

HOLYOKE, Mass., September 25, 1922.—The American Writing Paper Company has just made a well-deserved promotion in appointing John J. Dooley manager of its traffic department.

Mr. Dooley has been with the company since October, 1917, beginning as rate clerk in the traffic department, and subsequently becoming assistant traffic manager. His promotion is a just recognition of loyal and efficient service, and is in accordance with the company's policy to advance its own employees rather than to bring in men from other organizations.

Mr. Dooley's seventeen years' experience in railroad freight work, his wide knowledge of methods and schedules of the railroads and other channels of transportation throughout the whole United States and the high esteem in which he is held by the representatives of the railroads, combined with his special training in handling paper shipments, eminently fit him for the responsible position he now holds.

Mr. Dooley began his railroad career with the Boston & Maine Railroad in 1900 and worked at Springfield and other stations as telegraph operator, clerk and towerman. He was transferred to Holyoke in August, 1910, and continued his service with the Boston & Maine until 1917, when he joined the office forces of the big paper manufacturing organization.

What a Planted Forest Should Yield

GRAND MERF, P. Q., Canada, September 21, 1922.

Editor PAPER TRADE JOURNAL.

On page 18 of your issue for September 7 you have quoted me as saying that a planted forest should yield 75 cords to the acre. I wish that you would correct this statement, which I never made and which, without qualification as to the time of rotation, would seem absurd, and would have the effect of discouraging reforestation.

On a 40 year rotation, 250 square miles should yield 100,000 cords of pulpwood annually if cut clean and replanted. This would be at the rate of 30 cords per acre if cut clean; thinnings are not taken into consideration.

The paragraph referred to is in column two on page 18, and is headed "What a Planted Forest Can Do," and goes on to say that "the Chief Forester of the Laurentide Company estimates, etc."

Yours very truly,

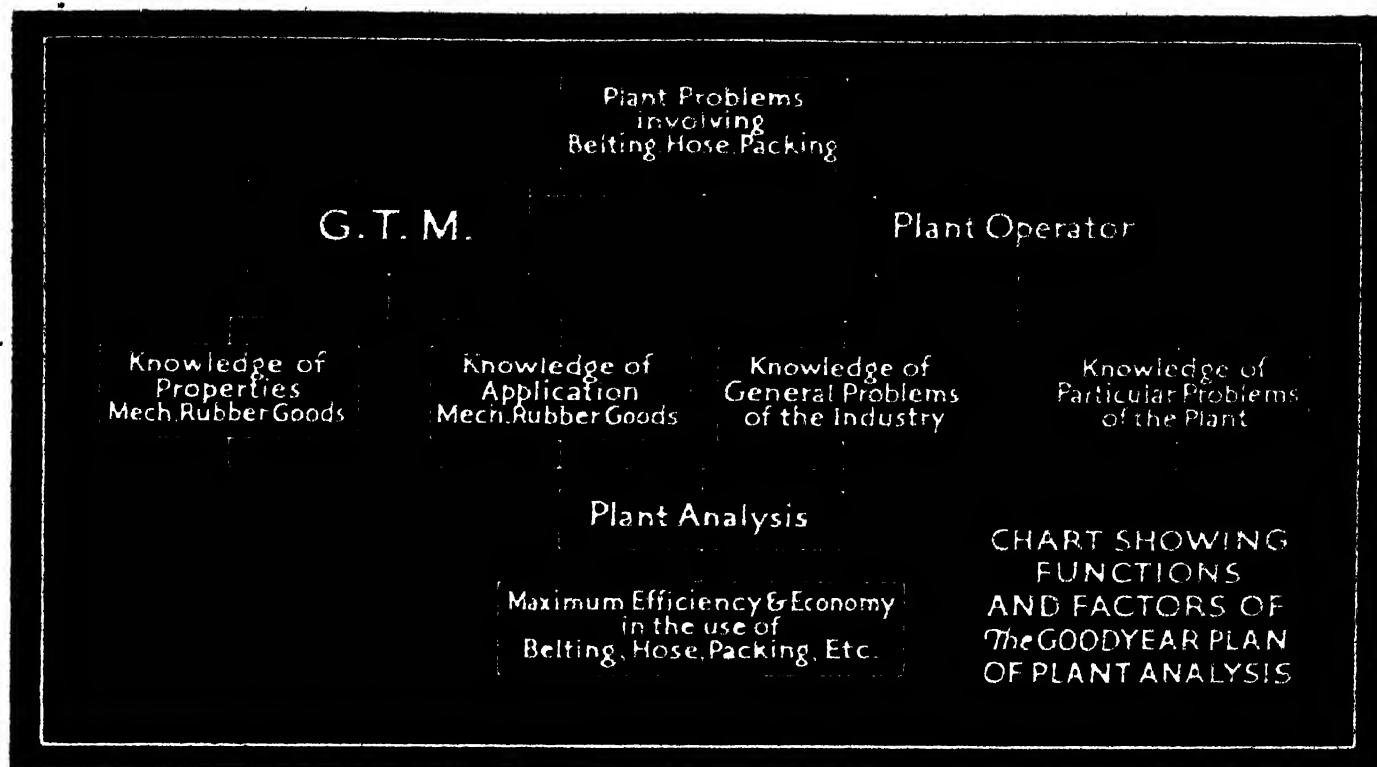
ELLWOOD WILSON,

Manager, Forestry Division, Laurentide Company, Limited.

No Dumping of Wall Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 25, 1922.—The Customs Service in answering the complaint regarding the dumping of wall paper in the United States from Canada has made an investigation and found that there is no dumping of this commodity on the American market.



Copyright 1922 by The Goodyear Tire & Rubber Co., Inc.

Plant Analysis Service — and the G. T. M.

Look at this chart. It pictures, in the language of the plant superintendent and the industrial engineer, the place occupied by the G. T. M.—Goodyear Technical Man—with relation to your belting, hose and packing problems.

It identifies the G. T. M. for what he is, the tested link in the chain of service connecting your need for efficient plant operation, and your knowledge of the special working conditions of your plant, with the Goodyear Plan of Plant Analysis and the products Goodyear makes for industrial use.

The G. T. M. is an expert in his line. He knows the properties of good mechanical goods. He is trained in the science of their specification and application. His work takes him into many plants, in many industries, so that he is familiar with most transmission and conveying problems, and is a practical authority on many of them.

When he comes to your plant, he comes as a friendly analyst of your operating problems, your troubles, maybe. He doesn't pretend to know it all. He takes the advice of your superintendent and engineer. He gives close attention to their experienced knowledge of your particular working conditions.

His sole object is to fit what he knows about belting, hose or packing to the demonstrated conditions of service in your plant. If he can find out what you need, and Goodyear can furnish it, he will recommend it to you, and after its installation he will follow it up with a sincere service.

Isn't it logical that a belt, or other equipment, that is constructed right in the first place, and then is specified intelligently to the work it is to do, is much more likely than any other product is to serve you longer and better, with freedom from trouble, and return to you the full value of its utmost efficiency and economy? The Goodyear Analysis Plan is based on that reasoning, and the G. T. M.'s work is to insure that you get the equipment that will serve you longest and best.

There is a G. T. M. in your neighborhood. Call on him for an analysis of your mechanical goods problem, whether it involves a single unit or an entire plant, a conveyor or a transmission, a hose or a packing equipment. For further information about the G. T. M., and his work, or the kind of service Goodyear products give in your particular industry, write to Goodyear, Akron, Ohio, or Los Angeles, California.

GOODYEAR



Recent Incorporations

EASTERN STATES PAPER SALES CORPORATION, Manhattan, New York. Capital \$5,000. Incorporators, C. A. Rood, J. A. Byrne, D. P. Berghimer. Attorneys, Ingraham, Sheehan & Moran, 14 Wall street.

TIDEWATER PAPER MILLS SALES CORPORATION, Manhattan, New York. Capital \$200,000. Incorporators, J. P. Shea, J. H. Kanna, M. J. Pfeffer. Attorney, J. A. Biady, 33 West 42d street.

THE SPNECA MILLS PAPER COMPANY, Cleveland, Ohio. Capital \$10,000. Incorporators, Anthony F. Caughan, R. E. Collins, T. A. Gillespie, E. E. Thomas and Patrick J. Collins.

OSWEGATCHIE PAPER COMPANY, INC., Gouverneur, New York. Paper goods and all kinds of paper. Capital \$200,000. Incorporator, F. B. Sterling, 140 Clinton street, Watertown.

Laurentide's Annual Meeting

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 25, 1922.—The annual meeting of the Laurentide Company was held here during the week. The report to the shareholders, a summary of which has already been published in these columns, was unanimously adopted and the board of directors of the Laurentide Company were re-elected, F. E. McNally, assistant secretary, being chosen to fill the vacancy created by the death of R. B. Angus. George Chahoon, Jr., president, was chairman. Owners of upwards of 153,000 shares were represented in person or by proxy.

Speaking of conditions in the pulp and paper industry, Mr. Chahoon said that the situation had been established to a large degree and that losses due to deflection had been balanced by suitable measures. The outlook for the industry was therefore good.

The loss of the company, through the death of R. B. Angus, its oldest director, was commented upon and an expression of sympathy was extended to the family of the deceased.

The directors present were Mr. Chahoon, F. A. Sabbaton, George H. Montgomery, K. C., C. R. Hosmer and Edwin Hanson. After the Laurentide meeting, interesting statements were made by F. A. Sabbaton, vice-president of the Laurentide Power Company, with reference to the workings of that company, of which the Laurentide Company is a shareholder to the extent of \$7,200,000. Mr. Sabbaton stated that they have, at times, turned in an effective 165,000 horsepower, and that they were turning back into the Laurentide Company's electric boilers, which had been recently installed, power that meant a saving to the paper company of some 5,000 tons of coal per month. It must, of course, be understood that this excess power is only available for this purpose owing to the fact that there is not at the present time a commercial market, otherwise it could not be profitably used in competition with coal. The Laurentide Power Company has been receiving payment since the first of July for 125,000 horsepower on its various contracts.

Plans for Woodlands Section Meeting

A special effort to secure the attendance of western and middle western States paper mill foresters at the Paper Week convention in Chicago, October 17, is being made by the Woodlands Section of the American Paper and Pulp Association the woodsmen's department of the organized paper industry.

Local problems of the lake States, in addition to general forestry problems faced by paper and pulp mill timber land operators will be featured at the convention, and the pulp manufacturers will doubtless be well represented at the convention.

Among the subjects for discussion will be the following:

1. Buying pulpwood by grades or specifications.
2. Proposed educational tractor demonstration test.
3. Formation of a western division of the Woodlands Section.

4. Pulp and pulpwood statistics.
5. Local woods operation problems.
6. Advisability of purchasing rough or peeled hemlock.

The Woodlands Section convention will be held the same day the Salesmen of the industry have their big meeting, and these two sessions, together with the meetings of several of the groups of manufacturers, such as the Book Paper Manufacturers, will mark the opening of the fourth fall conference of the paper industry held each year at Chicago. The convention sessions will be at the Drake Hotel, and the railroad rate of one and a half fare under the certificate plan is available to the Woodlands Section visitors, as well as to those attending the salesmen's and other association meetings.

News of the Wisconsin Trade

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., September 25, 1922.—Despite the repeated charge that investors are seeking tax exempt federal and municipal bonds to the detriment of industrial issues, the Marathon Paper Mills Company, of Wausau, disposed of \$1,450,000 worth of bonds—the entire issue—within 36 hours. The company offered the issue on Wednesday through a Milwaukee trust company and on Thursday noon—before the circulars had reached the bond salesmen or the bond buying public—every bond had been sold.

The company will use the proceeds to retire floating indebtedness and for increased working capital.

Water power this year has been more abundant than in many years and consequently most Wisconsin paper mill manufacturers have had their fuel worries lessened. In other years it was necessary to greatly curtail the amount of water used, with a consequent increase in coal consumption, but this summer and fall all the mills in the Fox river valley were able to use all the water that was necessary. In fact it has been necessary to open some of the sluice gates in the river—an unprecedented situation.

Reports from Wisconsin Rapids indicate the heavy rainfall has assured a plentiful supply of water and as a result larger paper mill operations have been possible, giving employment to more men.

Gilbert Mericle has resigned as superintendent of the George A. Whiting Paper Company at Menasha to become superintendent of an American Writing Paper Company mill at Holyoke, Mass. Mr. Mericle was given a farewell party by 60 employees of the Menasha company prior to his departure. His friends presented him with a gold watch and chain.

Strathmore Dealers Meet at Woronoco

WORONOCO, Mass., September 25, 1922.—The Strathmore Paper Company held a two-days' national convention for all dealers of Strathmore products Monday and Tuesday of last week. There was an attendance of nearly 100, many States being represented. The weather was everything that could be desired when the party were entertained to a steak roast at Woronoco heights Monday noon, followed by a business session in Memorial Hall. H. A. Moses, president of the Strathmore Paper Company, presided, and spoke at some length on the remarkable development of the paper industry. In the evening the party was entertained by Mr. Moses and other directors of the company at the horse show on the Eastern States exposition grounds. Tuesday morning at 10 o'clock another business session was held in Memorial Hall, after which the entire company motored to Woronoco park, where a regular clam-bake and sports were held.

Thompson & Norris Co. Suffers Fire Loss

BROOKVILLE, Ind., September 23, 1922.—Lightning struck the large straw shed of the Thompson & Norris Company, on Tuesday night destroying the shed and 30,000 tons of straw. While the fire burned for two days it was kept under control and no damage was done to the mill which is running at full capacity.

COLUMBIAN

Tape-Marked

PURE MANILA ROPE



EVERY FOOT OF THIS ROPE
IS ABSOLUTELY GUARANTEED
BY A RED, WHITE AND BLUE
"TAPE-MARKER" WHICH CAN
BE FOUND THROUGHOUT ITS
ENTIRE LENGTH.



For Every Purpose

Whether for construction, transmission, hoisting, rigging, or the countless other purposes to which Manila Rope is put, there is a *Columbian Tape-Marked Pure Manila Rope* of the correct size and "lay."

All sizes, in both three and four strand, can be quickly identified by locating the red, white and blue *Tape-Marker* in the manner shown above. This Marker is continuous throughout the length of the rope, and bears the words "Guaranteed Rope," certified by the manufacturer's signature—"Columbian Rope Co." immediately beneath.

JOBBERs and DEALERs:- It pays to handle Cordage with such a tangible guarantee from the maker to the jobber, dealer, and consumer. Write to-day for price-list, catalog, and your copy of the folder "How *Columbian Tape-Marked Pure Manila Rope* is Made."



COLUMBIAN ROPE CO. AUBURN, N.Y.

New York Trade Jottings

Halvar Lundberg, an efficiency expert, who has recently been promoting sulphite mill operating efficiency in Wisconsin, was among the New York trade visitors of the past week.

* * *

A. H. Nevius, vice-president and general manager of the Miami Paper Company, West Carrollton, Ohio, stopped over in New York Tuesday of this week on his way back home after the Washington paper conference.

* * *

C. A. Crocker, president of the Chemical Paper Manufacturing Company and president of the Crocker-McElwain Company, was in New York last Thursday to attend the meeting of the National Industrial Conference Board, where he is one of the representatives of the paper industry.

* * *

W. J. Kaybold, of the B. D. Rising Paper Company, Housatonic, Mass., and president of the American Paper and Pulp Association, passed through New York Monday of this week on his way back to Massachusetts after having attended the recent paper standardization conference at Washington.

* * *

George W. Sisson, Jr., president of the Racquette River Paper Company, of Potsdam, N. Y., and former president of the American Paper and Pulp Association, returned last week on the steamer *Celtic* after a several months' tour of Finland, Norway and Sweden as well as the chief paper and pulp manufacturing cities of Europe.

* * *

Among other New York men who attended the Paper Meeting of the A. S. M. E. Regional Convention, held at Springfield, Mass., of which George E. Williamson, president of the Technical Association, was chairman, were: J. O. Ross, of the J. O. Ross Engineering Company; George D. Bearce, of the News Print Service Bureau, and Mr. Bailey of the Bailey Meter Company.

* * *

Stewart Seaman, who has had a large part in developing the use of cotton linters as a paper making material, has become associated with Procter & Gamble Distributing Company, of Cincinnati, which company is engaged in the production of linters. Mr. Seaman, who was formerly with the Stanscott Company of Hopewell, Va., was in New York Wednesday of last week.

* * *

The Metropolitan Bag and Paper Jobbers' Association, Inc., an organization of the Metropolitan District of New York city, at its annual meeting—held at the Hotel St. George, Brooklyn, N. Y., recently elected the following officers for the ensuing year: Heberlein, L. H., president, Tuthill, Harry, of Tompkins & Tuthill, vice-president, Berger, J. M., of the Forbes Paper Company, treasurer; Wolf, A. T., of A & L. Wolf, Inc., secretary. The address of the secretary is, 256 E. 138th street, New York city.

* * *

W. G. MacNaughton, secretary of the Technical Section of the Pulp and Paper Industry, returned to New York Tuesday of this week from a trip to Springfield, Mass., where he attended the regional meeting of the A. S. M. E. for the purpose of hearing the paper on "Steam Utilization in a Modern News Print Mill" by S. W. Slater and J. E. A. Warner, of the St. Maurice Paper Company, Madeleine, Quebec. This paper is reprinted in the Technical Section of this issue of the PAPER TRADE JOURNAL.

* * *

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association, and O. M. Porter, secretary of the Woodlands Section, were in Washington this Monday attending the

meeting of the Advisory Committee of the Paper Industry to the Bureau of Standards Paper Section. They discussed the progress which is being made toward the standardization of paper. Dr. Baker remaining in Washington to take up the matter of the proposed Trade Association Manual, which the Department of Commerce is contemplating.

Bids and Awards for Government Paper

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 27, 1922.—The purchasing officer of the Government Printing Office has received the following paper bids:

172,000 lbs. 38x48—86 White S. & S. C. Printing Paper: Dobler & Mudge at \$.0775 per lb.; R. P. Andrews Paper Company, \$.0719; Old Dominion Paper Company, \$.08094; Bryant Paper Company, \$.08, Kalamazoo Paper Company, \$.0725; Samuel S. Alcorn, \$.071, and Allied Paper Mills, \$.075.

23,750 lbs. 29x41—50 White M. P. Printing Paper: Dobler & Mudge at \$.075 per lb.; Old Dominion Paper Company, \$.0852; International Paper Company, \$.0785; Bryant Paper Company, \$.075; Kalamazoo Paper Company, \$.07 and D. L. Ward Company, \$.075.

30,500 lbs. Binders' Board, various sizes Republic Bag & Paper Co., \$.97.20 per ton; Mathers-Lamm Paper Company, \$.87.70, R. P. Andrews Paper Co., \$108.00; Kerr Paper Mill Company, \$.90.00, Whitaker Paper Company, \$109.60, Doubler & Mudge, \$.89.25.

The purchasing officer of the Government Printing Office will open bids on October 6 for the following:

2,550 lbs. (100 reams) 17 x 28—25½ No. 20, Green Glazed Bond Paper.

4,472 lbs. (22 reams) 22½ x 28¾ White and Salmon Index Bristol Board.

The Government Printing Office will receive bids on October 4 for 172,000 pounds (2,000 reams) of 38 x 40—86 White S. and S. C. Printing Paper.

Crane & Co. have been awarded the contract by the Purchasing Officer of the Government Printing Office for furnishing 1,000 sheets of 15 x 21—47 No. 56, Crane's artificial parchment paper at \$.0567 per pound.

The purchasing officer of the Government Printing Office will open bids on September 29 for the following:

5,000 lbs. (100 reams) 25 x 38—50, No. 1 Salmon Machine Finish Printing Paper.

Find Bomb in Cellar of Paper Firm

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 25, 1922.—While cleaning a cellar at the Virginia Paper Company, 933 D street, northwest, Edward Gatewood, a colored porter, found concealed near the stairway leading to the cellar a suspicious looking round object. He wrapped it carefully in a gunny sack and took it to his home, 1215 Alton court, northwest, and later turned it over to Lieut. Beckett at the First precinct.

It was next taken to the office of Inspector C. L. Grant, who called in an expert on explosives from the United States arsenal, who reported that the object found by Gatewood was a time bomb, charged with a powerful explosive.

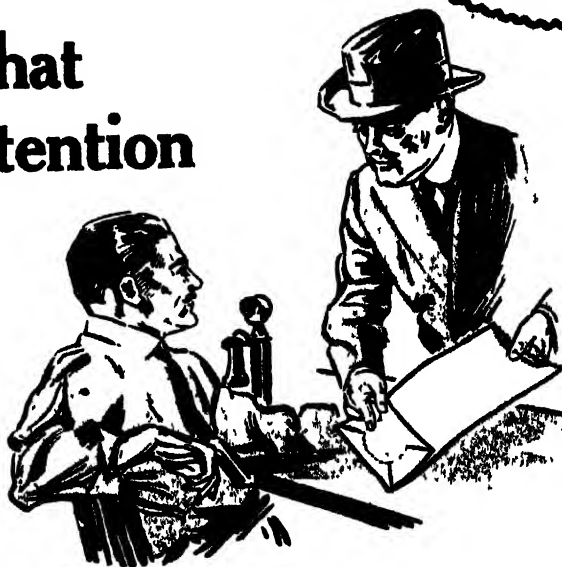
It was said that the bomb was set and timed for an explosion, but owing to the negligence of the person who placed the bomb in the cellar, the concussion cap was omitted, and so the bomb failed to explode at the time set. Police are making an investigation.

Lockwood's Directory of the Paper and Allied Trades for 1923 has just been issued. Order now. Price \$7.00.



The Bag That Commands Attention

The development of the Lawrence Bag and its resulting increase in sales have been due to intrinsic Quality—a quality that has been kept uniform. It's a bag that no buyer can overlook.



LAWRENCE GROCERS' BAGS

Improved Self-opening and Old-style Squares—each “family” the pinnacle of perfection because every detail under the direct supervision of Grocers' Bag Specialists—whose years of experience are reflected in every sack produced in our modern new plant.

James Lawrence, President

The Lawrence Bag Company
Miamisburg, Ohio

THE APPLETON MACHINE COMPANY



HORIZONTAL WOOD SPLITTERS
CENTRIFUGAL PUMPS
CYLINDER MOULDS
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WET MACHINES
FLAT SCREENS
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PAPER MAKERS TWINE

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The name "AMERICAN" as applied to cordage means "more value in every way." Send for copy of our General Catalogue, Prices and samples. Address Department M.

Largest Makers of Commercial Twines and Rope in the World

AMERICAN MANUFACTURING CO.

NOBLE AND WEST STREETS, BROOKLYN, NEW YORK CITY

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**Let Them Drink
to your
business health in cups you sell**

each drink a cup—each cup a sale for you and at lowest cost of any cup on the market.

At such prices **SALES RESISTANCE IS NEGLIGIBLE** and our direct advertising assistance in your city will get immediate results as it is now doing in many cities.

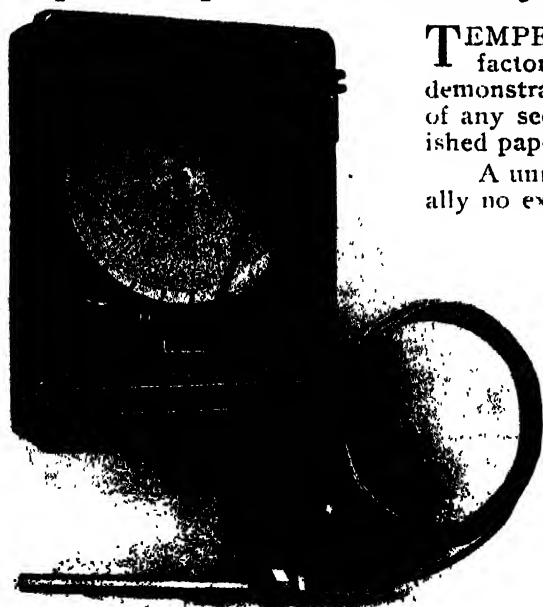
Burt's Paper Drinking Cups are made of fine white paper, without wax to make drinks taste, and are reinforced so holders are not necessary. They are kept under glass and cannot be wasted or soiled before use.

Cups retail at one fourth cent—dispensers at five dollars.

F. N. Burt Company, Ltd.
Paper Cup Division
Buffalo, N. Y.

THE QUALITY OF YOUR PRODUCT

Depends Upon the Uniformity of the Temperature in the Machine Room



TEMPERATURE control has always been one of the most annoying factors entering into the manufacture of paper. Experience has demonstrated that the slightest degree of variation in the temperature of any section of the machine room has affected the quality of the finished paper.

A uniform product is the desirable aim of every paper mill, and usually no expense is spared to achieve this result.

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Bulletin BE-303 will tell you about the most extensive line of recording instruments in the world. May we send it to you?

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White and Tinted Bristols—White Blanks—Index Bristol and Specialties in Card Boards.

The Pulp and Paper Trading Co.

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AGENTS FOR

J & J. Rogers Company, Ausable Forks, N. Y.

Ware Coated Paper Company, Ware, Mass.

E. B. Eddy Co., Ltd., Hull, Canada

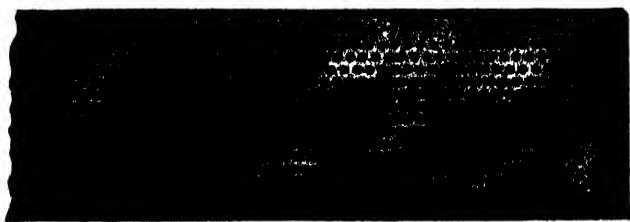
Canadian Kraft Limited, Three Rivers, Canada

Dealers in Wayagamack Kraft Pulp

Howard Smith Paper Mills, Montreal, Canada

EASTERN AGENTS of Sulphite Pulp

Made by Port Huron Sulphite & Paper Co., Port Huron, Mich.



"Lawson" Suction Box Covers

Made of Toughest Close grained Rock Maple Special drilling assures maximum suction, prevents all fins.

Paper Roll Plugs, Beater Paddles, Drainer Bottoms, Cogs, Mill Spools and Drums, Trucks, Dollies, Broke and Stock Cars

MENASHA WOOD SPLIT PULLEY CO. Menasha, Wis.

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Papier-Zeitung

BERLIN SW 11 (GERMANY)

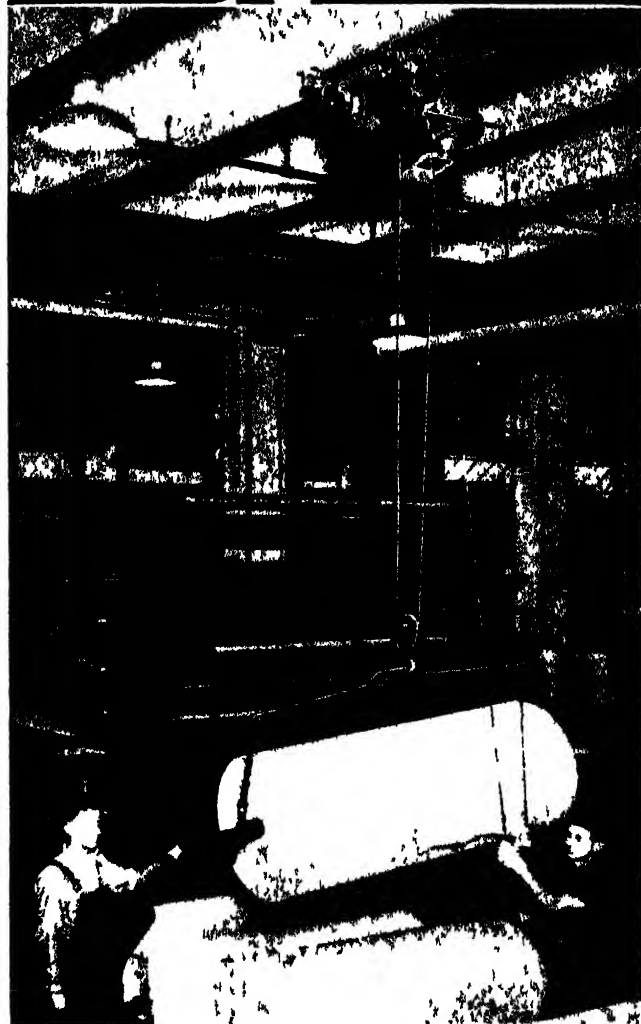
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appears three times a week

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Subscription: 4 Dollars

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Paper in rolls and in cases, and pulp are handled with ease, speed and economy by this new ½ and 1 ton electric hoist.

It is produced on a quantity production basis and is surprisingly low in price. Many paper mills and warehouses are using them

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KARL BECKER, Vice President

ERNEST R. COLLINS, Secretary
EDWARD M. MILLER, Treasurer

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Dealers in All Grades of Paper

SPECIALISTS IN
BOOK PAPER, GLASSINE and EMBOSSED
GLASSINE PAPERS

Exclusive Distributors for

WESTFIELD RIVER PAPER COMPANY
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Friction—
the unseen enemy of production
in your
plant



To Purchasing Agents:

AMONG PURCHASING AGENTS you have probably noticed this:

The Purchasing Agent who has grown into the habit of looking at things in their broad aspects, exercises an important influence on the conduct of his Company's affairs.

He does not stop at mere comparisons of prices. Rather, he includes in his inquiry complete information about the ultimate economy of *results*.

This ability to *see through* to results is a quality which the business world rates high.

Such a Purchasing Agent will ask himself:

"Does it pay my plant to impair its investment in expensive engines and machines by using oils which are cheap to buy, but costly to use?"

"Do I know why certain lubricating oils increase power but do not increase costs?"

"Do I know that my plant pays for good lubrication whether it gets it or not?"

"Is it better to order 'oils' for my plant, or to buy a scientific lubrication service which includes oils?"

When a Vacuum Oil Company representative sends in his card, you need not expect a hum-drum interview with an "oil salesman." Instead you will have presented for your consideration a definite proposition for reducing operating costs.

We call this proposition a Lubrication Audit. See explanation in column at right.

As this is a matter of more far-reaching importance than the purchase

VACUUM OIL COMPANY

of a few barrels of oil—you may wish, from a technical standpoint, to check up with your Plant Engineer the probable advantages of this Lubrication Audit.

We will gladly supply you with more detailed information about the Lubrication Audit upon request. It is understood that such a request puts you under no obligation. Kindly address our nearest branch office.

The Lubrication Audit

Explained Step by Step in Condensed Outline

INSPECTION: A thoroughly experienced Vacuum Oil Company representative in co-operation with your plant engineer or superintendent makes a careful survey and record of your mechanical equipment and operating conditions.

RECOMMENDATIONS: We later specify, in a written report, the correct oil and correct application of the oil for the efficient and economical operation of each engine and machine. This report is based on:—

(1) The inspection of the machines in your plant.

(2) Your operating conditions.

(3) Our 56 years of lubricating experience with all types of mechanical equipment under all kinds of operating conditions throughout the world.

(4) Our outstanding experience in manufacturing oils for every lubricating need.

CHECKING: If, following our recommendation in this audit, you install our oils, periodical calls will be made to check up the continuance of the desired results.

FOR THE ABOVE FREE SERVICE address our nearest branch office.

Domestic Branches:

New York
(Main Office)
Detroit
Des Moines

Boston
Pittsburgh
Buffalo
Dallas

Chicago
Indianapolis
Rochester
Kansas City, Kan.

Philadelphia
Minneapolis
Albany



Lubricating Oils

A grade for each type of service

VACUUM OIL COMPANY

Lubrication Audit

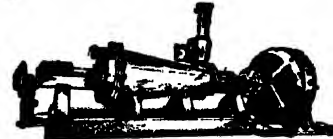
in the Paper Industry

would point out the Correct Lubrication for the important machines as follows:



Beaters

Beater bearings, generally unnecessarily hot, will run cooler if the stock leakage is eliminated and oiling is regularly attended to. The regular use of **Gargoyle D. T. E. Oil Extra Heavy** overcomes beater lubrication difficulties.



Jordans

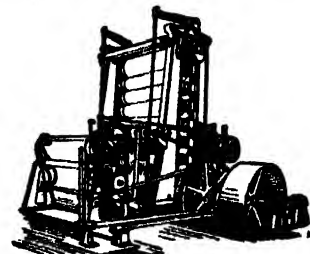
Because of the high speeds and heavy pressures which are always present, and the side pull on bearings when belt driven, it is necessary to use a heavy bodied oil. For this purpose we recommend **Gargoyle D. T. E. Oil Extra Heavy**.

Paper Machines



For bearings of the paper machine, subjected to induced heat from steam used for drying, an extra heavy bodied oil is required such as **Gargoyle D. T. E. Oil Extra Heavy**.

The rolls at the wet end subjected to moisture and heavy pressure demand a compounded oil which will resist the washing tendency and maintain a perfect oil film. We recommend **Gargoyle Voco Engine Oil No. 1** for these specially trying conditions.



Calenders

Paper machine production is directly dependent upon uniform speed. Calender bearings are subjected to heavy pressures and high frictional heat. The regular application of **Gargoyle D. T. E. Oil Extra Heavy** insures uniform speed, and consequently minimizes "broke."

Editorial

Vol. LXXV New York, September 28, 1922 No. 13
FIFTY-FIRST YEAR

To Teach Paper Making

The Institute of Industrial and Domestic Arts, Gardenvale, P. Q., has just issued a handsome syllabus of its correspondence courses in the Department of Pulp and Paper Making. The courses outlined include elementary science, mechanical pulp, sulphite pulp, sulphate and soda pulp, beating and coloring, paper machine operation and paper finishing. Instruction in these courses is given under the authority of the Canadian Pulp and Paper Association, the committee for the supervision of correspondence education consisting of F. J. Campbell, manager of the Canada Paper Company, Limited, O. F. Bryant, and George Carruthers, president of the Interlake Tissue Mills, Limited.

The secretary of the institute and the principal of the faculty is J. Newell Stephenson, M. S. Mr. Stephenson is particularly well qualified for the position for which he has been selected. He was graduated from the Massachusetts Institute of Technology, after which he spent several years at the practical business of paper making, then joining the faculty of the paper and pulp making school of the University of Maine at Orono. After spending some years teaching paper making, he became editor of *The Pulp and Paper Magazine of Canada*. In connection with this latter work, which he continues, he is the editor-in-chief of the series of textbooks on the manufacture of pulp and paper being published by the Joint Vocational Educational Committee of the Paper Industry of the United States and Canada on which this correspondence course has been founded.

In addition to Mr. Stephenson, the faculty includes the following: John Jesse Clark, M. E., formerly dean, International Correspondence School, vice-principal, mathematics and mechanical science; Sinclair Laird, M. A., B. Ph., dean, Macdonald College, supervisor of preparatory courses; T. Linsey Crossley, B. S., chemistry and physics, testing of pulp, and director of extension service in education; P. E. Piche, B. A., C. E., M. E., translator and director of education in French language; Carleton John Lynde, Ph. D., professor of physics, Macdonald College, physics; William C. Greenough, B. S., co-author, "Electrical Engineers' Handbook," electricity; Rex W. Hovey, B. A., director service department, Abitibi Power and Paper Company, chemistry of wood; Harry J. Buncke, C. E., mechanical engineer, Abitibi Power and Paper Company, mechanical pulp; Bjarne Johnsen, Dr. Ing., chief chemist, Hammernill Paper Company, sulphite pulp; Arthur B. Larchar, S. B., superintendent, Penobscot Chemical Fiber Company, soda pulp; Henrik Grinstad, superintendent, Brompton Pulp and Paper Company, sulphate pulp; Hugo H. Hansen, S. B., chief chemist, Eastern Manufacturing Company, bleaching; E. C. Tucker, B. S., superintendent, Crocker-McElwain Paper Company, rag room operation; Edward T. A. Coughlin, B. Sc., Ch. E., superintendent, Monarch Paper Company, treatment of waste papers; Ernst Mahler, general superintendent, Kimberly-Clark Company, beater room practice; Judson A. DeCew, B. A. Sc., consulting paper technologist, rosin sizing;

Kenneth T. King, expert in paper coloring, E. I. duPont de Nemours Company, coloring; George S. Witham, Sr., manager of mills, Union Bag and Paper Corp., news machines operation; George E. Williamson, executive engineer, Strathmore Paper Company, book and writing machines; A. O. Bowness, paper mill superintendent, E. B. Eddy Company, wrapping paper machines; L. M. Smith, assistant manager, Brompton Pulp and Paper Company, cylinder machines; H. R. Harrigan, production engineer, American Writing Paper Company, special machines; R. O. Harper, manager, B. D. Rising Paper Company, tub sizing; W. D. Sommerville, Eastern Manufacturing Company, paper finishing; Dard Hunter, paper specialist, hand-made papers; Clark Marion, Champion Coated Paper Company, paper coating; Fred A. Curtis, United States Bureau of Standards, paper testing, also a staff of specialists on general mill equipment.

As may be seen from the foregoing, the faculty is drawn from some of the most representative men in their lines in the industry of the United States and Canada. All of them have had much practical experience and hold responsible positions in the business.

There has been need for an institution of this kind in the industry for a long time, and the assertion may safely be ventured that the Department of Pulp and Paper Making of the Institute of Industrial and Domestic Arts will meet this need in every respect as perfectly as it is humanly possible to do. The *PAPER TRADE JOURNAL* takes great pleasure in recommending it unhesitatingly to the many young men in the industry, who cannot fail to profit from its instruction.

An Elastic Tariff

So much interest was taken in individual rates of the tariff bill as it was being framed by Congress that practically no attention was given to the greatly increased powers and duties of the United States Tariff Commission, which have become law under the new tariff act.

In the new tariff act, as is generally known, provisions have been made for what is termed an "elastic tariff." This authorizes the President to increase or decrease the duties as laid down by law and to shift to the American valuation system under certain conditions. This change, which must be authorized by the President by proclamation, and other changes which are allowable under the new law, can only be made after a thorough investigation by the Tariff Commission.

Investigations by the commission will be made along judicial lines and while it has not yet been definitely determined, it is believed that the commission will have hearings, and that these hearings will be opened to the public, along with arguments which will be made before the commission. It is understood that new laws of procedure are now being drawn up by officials of the commission in preparation for the enlarged work.

The appropriation for the Tariff Commission for the present fiscal year ending July 1, 1923, is \$325,000, but an extra appropriation of \$250,000 is being asked by the commission in order that the wishes of Congress may be carried out.

In the new law the President is also authorized to increase or decrease duties and to change classifications whenever necessary to equalize the ascertained differences in cost of production. No

duty, however, may be increased or decreased more than 50 per cent of the duty specified in the law. No authority is given the President to transfer any commodity from the dutiable list to the free list or vice versa, nor may any duty be changed from specific to ad valorem. The differences in costs of production are to be ascertained in the United States and in principal competing foreign countries. As the tariff bill originally passed the Houses of Congress, this function of the President was to have remained in effect only until July 1, 1923, but as the bill was reported from conference, and as it finally became law, this limitation was removed, so that as long as the present tariff bill remains law the President will retain this power unless it is later rescinded by a special act of Congress. Those who have followed this matter most closely are of the opinion that this is the first step toward taking tariff making out of the hands of Congress.

Under the new law and after an investigation by the Tariff Commission, the President is authorized to substitute American valuation for foreign valuation, whenever necessary to equalize ascertained differences in costs of production, under certain conditions and limitations. The law prescribes the factors which the President is to take into consideration in determining differences in costs of production, and further provides that investigations to assist the President in ascertaining such differences are to be made by the Tariff Commission.

The President is not authorized to increase rates beyond the specified maximum ad valorem rate fixed in any paragraph of the law.

The law also provides for unlawful, unfair methods of competition and unfair acts in the importation of merchandise into the United States which threaten the stability or existence of American industry. This is really an extension of the powers of the Federal Trade Commission which are given to the Tariff Commission. Investigations of cases arising under this provision of the law are to be made by the Tariff Commission, and its findings are subject to review on questions of law by the United States Court of Customs Appeals. The final findings of the commission are then transmitted to the President, and he is authorized in case such unfair methods or acts are established to his satisfaction, to impose additional duties upon merchandise imported in violation of the act and in extreme cases he is authorized to prohibit the offending person from importing any merchandise into the United States. The President is also given discretionary powers to impose additional duties or prohibition upon imports from any country discriminating against the overseas commerce of the United States.

In the bill as it became law the duties of the Tariff Commission are redefined and enlarged, but the original organic act, under which the commission was organized, remains unchanged.

Southern Cotton & Paper Co. Increases Stock

CHATTANOOGA, Tenn., September 25, 1922.—The Southern Cotton and Paper Company filed an application with the register last week for authority to amend its charter so as to increase the authorized capital stock from \$200,000 to \$300,000.

Since the organization of this company in the Fall of 1921, the entire original capital has been sold and the mill, including the pulp mill and the paper mill, has been completed. The plant is in Alton Park.

Plans for Paper Week in Chicago

Plans were formulated for the biggest convention yet held by the Salesmen's Association of the Paper Industry at a conference in New York, Wednesday evening, September 20, attended by leaders of the Chicago district, who are in direct charge of the arrangements, and Eastern officers of the Salesmen's Association.

The Chicago salesmen will take charge of the social side of Paper Week in Chicago the week of October 16, and their own particular part of the program will be their convention on Tuesday, October 17. Those in attendance at the New York conference to plan the details were J. L. Fearing, vice-president for the Chicago district; F. P. Whiteley, chairman of the committee on arrangements for the fall convention; H. H. Reynolds, of Housatonic, Mass., president of the Salesmen's Association; J. Donald MacLaurin, vice-president of the New York district, and Dr. Hugh P. Baker, secretary of the national association.

The securing of former Governor Frank O. Lowden of Illinois, who was a leading candidate for the presidential nomination in 1920 until the sentiment crystalized on Mr. Harding, has been a notable success for the Chicago group. He will be one of the speakers of the evening banquet of the salesmen, which will be attended not only by members of the salesmen's organization but open also to paper mill executives. In fact, it was decided to make a special effort to secure a large attendance of paper mill executives, so that they can appreciate the work that is being done by their salesmen to improve the methods of marketing, as far as the paper industry is concerned.

The Chicago committee consists of fifteen salesmen, all of whom are assigned to special duties in connection with the convention, by a series of sub-committees. One group will arrange for the convention session, another for the banquet, and others for similar duties, while all are to serve as a general hospitality committee.

The speakers' committee has completed the list of after-dinner speakers for the banquet, for, in addition to Governor Lowden, Edgar Guest, the noted humorist, will give one of his characteristic addresses, and the chaplain, Dr. George Craig Stewart, will talk on the work of the salesmen and its relationship to the success of the American Paper and Pulp Association, of which the salesmen's organization is a part.

Inasmuch as the fall conference of the paper industry at Chicago does not include a formal banquet but a joint luncheon on Thursday between the manufacturers and the merchants, the salesmen are planning to make the Tuesday banquet the central social figure of the week. They are certain that there will be 500 in attendance, including the executives, and have changed the original plans to secure a larger room at the Drake Hotel than was at first assigned to make room for the larger attendance that is now anticipated.

The Chicago salesmen, Mr. Fearing said, before returning to Chicago, gave up their usual summer outing in order to concentrate on plans for the fall convention and banquet.

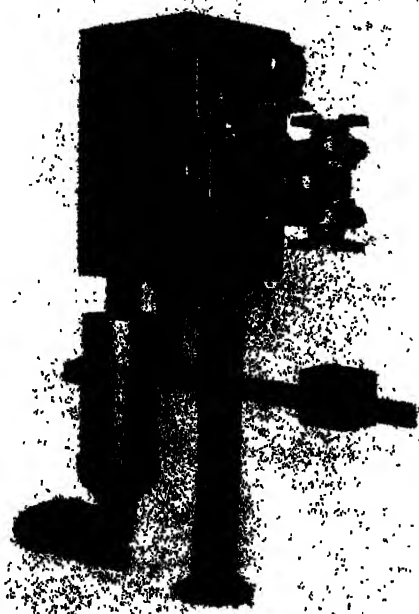
Consolidated Paper Co. Makes Machine Changes

[FROM OUR REGULAR CORRESPONDENT.]

APPLETON, Wis., September 25, 1922.—Important mechanical changes were made last week on the new high speed news print paper machine in the Wisconsin Rapids division mill of the Consolidated Water Power and Paper Company. The Fourdrinier was lowered from a 36-inch to a 16-inch pitch in order to obtain better running qualities and bring about a closer formation of the paper. It is said the change was in line with the best practice which experience has shown with other high speed machines. Papermill men, it is said, will watch the result of the change with considerable interest as the proper pitch of the wire has been an important problem in connection with high speed machines. The Beloit Iron Works, which built the machine, provided the new parts necessary for the change.

The Trimbey Automatic Consistency Regulator

(Patented)



A well tested and reliable means of securing
UNIFORM STOCK for Beater furnish or
Paper Machine furnish.

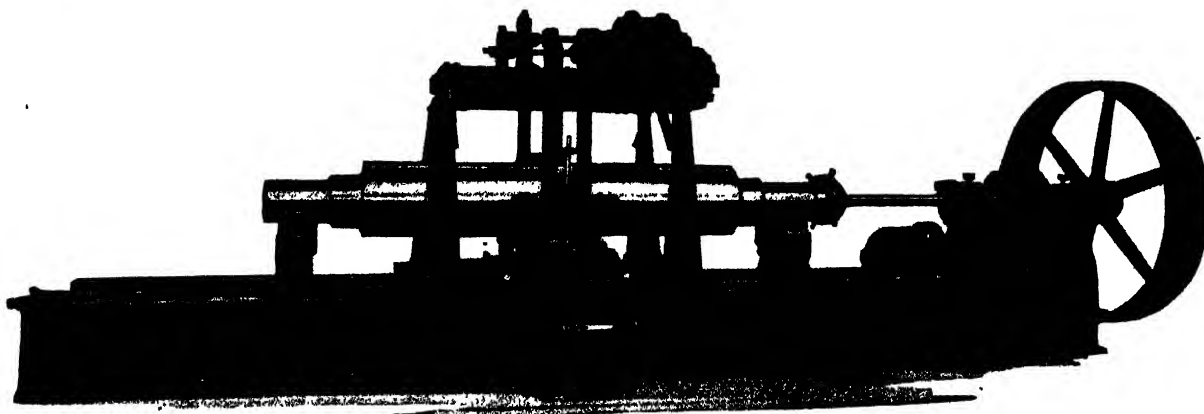
UNIFORM "brushing" action at the Jordan
means improved quality.

*More than 150 in use in the United
States, Canada and Foreign Countries*

Ask Us

TRIMBEY MACHINE WORKS
Glens Falls - - - New York

LOBDELL **ROLL GRINDERS** are the only
machines of the kind fitted with auto-
matic crowning device which develops a perfect crown without the use of a
guide or former and repeated trying for the correct setting.



LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic
or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

LOBDELL CAR WHEEL CO. Est. 1836 **Wilmington, Del. U. S. A.**

Section of the Technical Association of the Pulp and Paper Industry



AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by W.G. MacNAUGHTON, Secretary

NEW MEMBERS OF THE T. A. P. P. I.

Since the last publication of new members to the Technical Association of the Pulp and Paper Industry, the following have been elected:

ACTIVE

Hubb Bell, United States Testing Company, 316 Hudson street, New York.
Charles M. Bullard, Marinette and Menominee Paper Company, Marinette, Wis.
Harry Kay, Price Bros. & Co., Ltd., Kenogami, Que.
William R. Maull, Dill & Collins Company, Philadelphia, Pa.
R. N. Miller, Forest Products Laboratory, Madison, Wis.
Stewart E. Seaman, 2616 Monument avenue, Richmond, Va.

ASSOCIATE

Adam E. Armstrong, Armstrong Machine Works, Three Rivers, Mich.
Samuel J. Baril, Maurice A. Knight, 404 World Building, New York.
Seth L. Bush, Crocker-McElwain Company, Holyoke, Mass.
James A. Cameron, Cameron Machine Company, 61 Poplar street, Brooklyn, N. Y.
Herbert H. Fish, Jr., Great Western Paper Company, Lady-smith, Wis.
Charles H. Plantz, St. Regis Paper Company, Deferiet, N. Y.
John R. Roberts, E. I. du Pont de Nemours & Co., Wilmington, Del.
H. Z. Schniewind, Foreign Paper Mills, Inc., 72 Duane street, New York.
William W. Spratt, Westinghouse Electric and Manufacturing Company, East Pittsburgh, Pa.
William J. Weed, Electro Bleaching Gas Company, Buffalo, N. Y.
Frank E. Winslow, General Electric Company, Witherspoon Building, Philadelphia, Pa.

JUNIOR

Albert E. Bachmann, Pejepscot Paper Company, Brunswick, Me.
John Buss, Bogalusa Paper Company, Bogalusa, La.
P. W. Carr, Pejepscot Paper Company, Lisbon Falls, Me.
John R. Dykers, Southern Paper Company, Kreole, Miss.
George F. French, Warren Manufacturing Company, Milford, N. J.
Louise E. McGrath, Booth Chemical Company, Elizabeth, N. J.
James D. Miller, York Haven Paper Company, York Haven, Pa.
Edwin A. Riley, Pejepscot Paper Company, Brunswick, Me.
Edward E. Saunders, Inland Empire Paper Company, Spokane, Wash.

Robert W. Van Kirk, Jr., E. I. du Pont de Nemours & Co., Inc., Boston, Mass.

TRANSFERS IN GRADE

Grellet N. Collins, from Junior to Active.
H. W. Laymon, from Junior to Active.
W. F. Thiele, from Associate to Active.

Confer on Paper Standardization

WASHINGTON, D. C., September 27, 1922.—A conference was held at the Bureau of Standards, Department of Commerce, on Monday between officials of the Paper Laboratory and the advisory committee from the paper industry for the Paper Section of the Bureau of Standards.

A report was submitted at the conference regarding simplification which had been prepared by the simplification sub-committee of the Bureau of Standards. Research problems were also discussed, including measuring the color of paper, foreign and domestic clays as filler for paper and the sizing of paper. Among those attending the conference were: Dr. S. W. Stratton, director of the Bureau of Standards; E. A. Curtis, chief of Paper Laboratory of the Bureau S. L. Willson, of the Graham Paper Co., and special co-operator with the bureau. The following paper manufacturers, who are members of the advisory committee from the trade, were also present: Arthur H. Nevius, chairman of the committee; W. R. Raybold, president, American Paper and Pulp Association; Charles Gordon of the Oxford Paper Company; Alexander Gilman of Kalamazoo, Mich.; D. A. Smith of the District of Columbia Paper Manufacturers' Company; John C. Schmidt of Schmidt & Ault, York, Pa.; Mr. Harrower, of Linton Brothers; Harry Fletcher of Alpena, Mich.; Ray Hatch of the Hammersly Paper Company, Garfield, N. J.; Fred Clark of the Pejepscot Paper Company, Brunswick, Me.; Dr. Hugh P. Baker, secretary of the American Paper and Pulp Association; Mr. Taylor of the Taylor Logan Company Papermakers and O. M. Porter, secretary of the committee.

Pulp Mills for Vancouver

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 25, 1922.—Vancouver is to get the big pulp and paper plant which the Seaman Paper Mills Company of Chicago plan to build in British Columbia, according to developments in the negotiations which are being carried on with Premier John Oliver and President Seaman and his associates who are here. The mills will get their power from Bridge River, near Seaton Lake, 100 miles up the Pacific Great Eastern Railway.

DRYING PAPER

In connection with the study of drying and computing its efficiency the attached has been suggested for consideration at the session of the Technical Association of the Pulp and Paper Industry to be held at the fall meeting, October 9 and 10, in Detroit.

Moisture Removal Test

1. Test of.....Paper Machine
.....Mill Company
To determine of dryer part
Date Duration

2. Features, Other Than Drier Part Design, Affecting Performance

- (a) WET END (Note: The following data to be accompanied by proper outlines or section drawings).

Head box and slice: Width, Depth.

Breast Rolls: Diameter.

Wires: Length, Width, Gauge, Pitch--inches per foot.

Tube Rolls: Diameter, Number, Distance on centers.

Suction Boxes: Number, Width, Vacuum.

Suction Roll: Diameter, Suction area, Vacuum.

Couch Roll: Diameter.

Presses: First: Pressure per inch of width, Age of felt, Condition, Kind.

Second: Pressure per inch of width, Age of felt, Condition, Kind.

Third: Pressure per inch of width, Age of felt, Condition, Kind.

Fourth: Pressure per inch of width, Age of felt, Condition, Kind.

- (b) BUILDING: (Note: The following data to be accompanied by proper plans and elevations).

Materials: Wall, Floor, Roof.

Head: Length, Width, Height, Material.

Pit: Length, Width, Depth, Material.

Air supply system: Type, Capacity (cu. ft./min.).

3. Features of Drier Part Affecting Performance

- (c) DRIER PART: (Note: The following data to be accompanied by proper outline and section drawings).

Drier Rolls: Length, Diameter, Area of cylinder, Area of heads, Arc of contact with paper, Length in contact with paper, Arc of contact with felts, Length in contact with felts, Number, Total area in contact with paper, Total area of driers.

Baby drier: Diameter.

Sweat Rolls: Number, Diameter.

Felt Driers: Number, Diameter.

Steam supply system: High pressure: Size supply line, Kind of regulating valve. Low Pressure: Size supply line, Kind of regulating valve.

Header: Number of sections, Diameter of 1st section, Diameter of 2nd section, Diameter of 3rd section, Diameter of 4th section.

Condensate removal: Kind and make of removal system, Number of header sections, High pressure (First) section: Size of Number driers connected, Second section: Size of Number driers connected, Third section: Size of Number driers connected, Fourth section: Size of Number driers connected.

Data

Furnish: —per cent, —per cent, —per cent, Size —per cent, Alum —per cent, Clay —per cent.

Paper: Grade, Basis weight, Finish.

Moisture in Stock: Consistency in head box, Freshness in head box.

Per cent moisture (bone dry basis): Leaving wire, Leaving 1st press, Leaving 2nd press, Leaving 3rd press, Leaving 4th press, Leaving baby drier, Leaving Drier Number 1, Leaving Drier Number 2, Leaving Drier Number 3, Leaving last drier.

Steam: (per cent moisture) High pressure supply, Low pressure supply, Entering 1st drier section, Entering 2nd drier section, Entering 3rd drier section, Entering 4th drier section, Entering air (Humidity), Leaving air (Humidity), Outside air (Humidity).

Temperatures: Stock: In head box, Leaving wire, Leaving 1st press, Leaving 2nd press, Leaving 3rd press, Leaving 4th press, Leaving baby drier, Leaving Drier Number 1, Leaving Drier Number 2, Leaving Drier Number 3.

Leaving last drier number Steam: High pressure supply, Low pressure supply, Entering first drier section, Entering second drier section, Entering third drier section, Entering fourth drier section, Leaving first drier section, Leaving second drier section, Leaving third drier section, Leaving fourth drier section.

Air: (Locate Positions on Sketch) Room air, Position Number 1, Number 2, Supplied, Discharged, Outside.

Pressures: Steam supply, High pressure, Reduced pressure, Exhaust, 1st section drier header, 2nd section drier header, 3rd section drier header, 4th section drier header.

Steam Discharged: 1st section drier head, 2nd section drier head, 3rd section drier head, 4th section drier head.

Air: Outside barometer, Inside barometer. Supplied air pressure, Removed air pressure.

Speeds: Paper speed, Entering air velocity, Discharged air velocity, Wind velocity.

Quantities: Pounds of water per hour at Head box, Entrance suction boxes, Leaving suction boxes, Entering suction roll, Leaving suction roll, Entering first press, Entering second press, Entering third press, Entering fourth press, Entering drier part, Entering first drier, Entering 2nd drier.

Leaving last drier.

Pounds of stock per hour at: Head box, Entrance to suction boxes, Leaving suction boxes, Entering suction roll, Leaving suction roll, Entering first press, Entering second press, Entering third press, Entering fourth press, Entering drier part, Leaving drier part.

Pounds of steam per hour: Entering 1st drier header, High pressure, Reduced pressure, Exhaust, Entering 2nd drier header, High pressure, Reduced pressure, Exhaust, Entering 3rd drier header, High pressure, Reduced pressure, Exhaust.

Pounds of condensed steam leaving 1st drier header, 2nd drier header, 3rd drier header, 4th drier header, Pounds of air supplied by ventilation system, Pounds of air removed by ventilating system.

B. T. U. in sheet: Entering drier part, Leaving drier part.

B. T. U. in steam: Entering drier part, Leaving drier part.

B. T. U. in air: Entering room, Leaving room.

Results: Hours run, Pounds paper made, Pounds of moisture removed, Pounds of steam used F & A. 212°, Pounds of steam per lb. of paper, Pounds of water per sq. ft. of drying surface, Pounds of steam per lb. water removed, B. T. U. supplied, B. T. U. required, 100 per cent efficiency, EFFICIENCY.

Bud Worm Works Havoc in Maine

[FROM OUR REGULAR CORRESPONDENT]

SKOWHEGAN, Me., September 19, 1922.—The spruce bud worm has worked havoc in the forests of northern Somerset county, causing large tracts of what was fine growth of spruce to look as if fire had run through them. Several of the paper making companies are planning to cut this timber the coming season and save it until needed in the pulp mills.

Fall Meeting of the Technical Association

HOTEL WOLVERINE, DETROIT, MICHIGAN

Monday and Tuesday, October 9 and 10, 1922

PROGRAM

Monday, 9.30 a. m. Business Session.

GEO. E. WILLIAMSON, Chairman, Amendments to the Constitution,
Reports of Committees, General Business.

Monday, 12 m. Executive Committee Luncheon.

Luncheon meetings of other committees as arranged by the chairmen.

Monday, 2 p. m. Waste in the Industry.

R. B. WOLF, Chairman, G. D. BEARCE, Vice-Chairman, Mill Effluent and
Material Recovery, Barking Drum Refuse.

Monday, 7.30 p. m. Association Dinner in Hotel Wolverine. Tickets \$5.

Tuesday, 9.30 a. m. Sectional Meetings.

Paper Testing, F. A. CURTIS, Chairman; Drying of Paper, F. C. CLARK,
Chairman.

Tuesday, 2 p. m. Plant Visits as Arranged.

Invitations have been received from Detroit Sulphite Pulp and Paper Co.,
Port Huron Sulphite and Paper Co., Chemical Engineering Department, Ann
Arbor.

A DICTIONARY OF PAPER TERMS

(Concluded from last week)

Zea Mays. Indian Corn—maize—maize straw is a possible source of paper-making material.

Zeolites. Hydrous silicates of alumina and the alkalis, Artificial zeolites are used in connection with water softening.

Zinc Chloride. $ZnCl_2$ a salt which, when concentrated, has a marked hydrolizing or solvent action on cellulose which dissolves in a solution of zinc chloride in twice its weight of 35% hydrochloric acid. Zinc chloride is Solution A of Herzberg's stain for microscopical examination of paper,—which see (note Herzberg's stain will appear in revision).

Zinc Dust. Finely divided zinc which has a strong reducing action. It is used in examining dyestuffs. It is readily inflammable.

Zinc Sulphate. White vitriol.

Directory of Terms—Additions and Revisions

Editor's Note.—The list given represent the additions and approved revisions so far received by the editor of the text books, J. N. Stephenson, Gardenvale, Que. Superintendents and practical pulp and paper makers are especially urged to check over the terms published in the issues of June 1st to June 29th inclusive and submit additions and revisions.

Acid. Colloquially any chemical solution of a corrosive nature either acid or alkali.

Air Dried. Paper, either hand made or machine made dried by exposure to air either in lofts, as in the case of hand made, or in festoons in the case of air dried machine made paper. Leather board and sometimes board for special purposes is air dried by spreading the sheets on the ground in the open, now very seldom seen.

A. T. S. (Animal Tub Sized). Papers tub sized or top sized with glue or gelatine.

Baby Drier. Pony Drier. Receiving Drier. Fore Drier. The first drier next the presses, usually of smaller diameter than the rest of the stack and not heated.

Baby Press. One of the primary presses of a cylinder machine placed between the couch and the first press.

Back-off. Refers to the pressure pump customarily used in mechanical pulp mills for reversing the action of the hydraulic pressure cylinders, thereby ensuring uniform pressure in the cylinders not affected.

Backing Wire. The coarse wire netting on a cylinder mold or other screen serving as a support for the finer facing wire in contact with the stock.

Band. The part of the wrapper of a paper roll sometimes applied to each end, usually of a contrasting color for distinctive effect.

Barking Drum. A cylinder in the interior of which blocks of wood are tumbled by rotation for the purpose of removing the bark—continuous and intermittent, of several designs.

Baumé. A hydrometer scale (see hydrometer) used for liquids lighter or heavier than water. Heavy liquids start with water as zero (Sp. Grav. 1.000) and run upwards as they become heavier (in specific gravity). Light liquids have water as 10° and run upwards as they become lighter (in specific gravity). Also spelled Beaumé.

Berlin Blue. A color produced in the beater by adding first nitrate of iron and later yellow prussiate (ferrocyanide) of potash. Often called Prussian Blue.

Bevel Gear. A geared drive in which the driving plane is not parallel to the plane of the driven gear. When these are at right angles they are referred to as Miter gears.

Blasting Paper. A heavy wrapping paper, usually water finished and composed largely of chemical pulp. Used in mines for introducing the powder into the drill hole.

Blasting Rolls. Small rolls of blasting paper, usually of 3, 5 or 7 pounds weight and 9, 12 or 15 inches in length and tied in bundles of five.

Body Paper. Refers to bulking or supporting paper of enameled or other composite papers.

Box. The journal housing, carrying the bearing metal of babbitt or brass and supporting the journal.

Brasses. Previously formed bearing liners of brass or bronze to be introduced into the box when required.

Broke Beater. The beater, usually equipped with special roll for continuous operation, used for pulping the broke produced on the paper machine.

Broke Hustler. A spare member of the machine crew employed in some mills, especially on book and writing, to handle the broke.

Bronze. An acid-resisting alloy composed ordinarily of 90 per cent copper, 10 per cent tin. (Tobin Bronze.)

Bulk. A term used to indicate the thickness of a certain number of pages or the number of sheets to an inch (caliper).

Bull Chain. A single conveyor chain by which logs are brought to the saw or loading platform (log jack).

Bull Cook. The camp janitor having care of the bunkhouses and cutting and splitting the fire wood for the camp.

Bull Screen. The coarse screen in mechanical pulp mills which receives the pulp from the grinders giving it a preliminary screening—of several forms.

Butchers Paper. Wrapping paper for meat shop use. Of sulphite and mechanical pulp in various proportions according to quality but highly waterproof with rosin size.

Butchers' Manila is steam finished and of manila color.

Butchers' Fiber is water finished in natural color.

Butchers' Dry Finish, machine, finished, usually than the in color, of lighter weight and better quality than the others mentioned.

Camels Hair. Transmission and conveyor belt composed of camels hair woven in a solid web.

Cant. A rectangular timber of any dimension produced in a saw mill preparatory to further operation.

Cant Hook. A hood logging implement for turning logs, somewhat similar in design to a *peavey* but with the end shod with a band of steel provided with a lip instead of a spike.

Car Lining. Paper composed usually of screenings or waste paper used for lining cars for protection of the contents.

Carbon Black. A material similar to lamp-black but with lower coloring power, used like lamp-black for producing grey and black colors in paper.

Case Lining. Specially made paper for lining boxes for ocean shipments. Usually made impervious to moisture by treatment with asphalt.

Catalog Paper. A light weight printing paper of good quality. Used as the name implies.

Check Valve. A fitting for a pipe whereby fluids may freely pass in one direction, but are prevented by its construction from passing in the opposite direction.

Chemical Manila. Railroad manila writing composed entirely of chemical pulp (sulphite and soda).

China Paper. A special waterleaf paper made in China and used by plate printers.

Chuck (for roll of paper). A device which, by its action, prevents the roll from turning on the shaft, permitting control of its rotation. It is bolted to the shaft and grips the end or inner side of the core. Employed on roll printing presses and rotary cutters.

Cigarette Holder. A pipe used in connection with a fourdrinier paper machine in putting on a wire. The pipe carrying the wire is slipped over the journal of the bottom couch roll permitting the wire to be slipped into position.

Clothing (of paper machines). The wire, jacket, press felts and drier felts.

Clutch. A device for transmission of power permitting disengagement of two general types, friction clutch (friction coupling) and jaw clutch.

Cooker. Colloquial term for the digester.

Cooking Acid. The acid used in sulphite digestion. Reclaimed acid as opposed to system acid.

Copper Number. A means of determining the amount of oxycellulose present in chemical pulp, by boiling it in Fehling's solution under regulated conditions. The C. number is the grams of copper that would be reduced by 100 grams of bone dry fiber.

Cord. A unit for measuring wood. The common cord is roughly hewn wood or pulpwood in lengths of 4 feet, in a pile 8 feet long and 4 feet high. $8' \times 4' \times 4' = 128$ cubic feet. There are cords of other dimensions as the *Quebec cord* $8' \times 4' \times 4' 3"$. Dealers in fuel wood use a cord which is really $1/3$ of a cord. Their cord is 16" deep—the 48" sticks being cut in three pieces of 16" and making 3" ricks or cords, $8' \times 4' \times 1' 4"$. Some pulpwood is bought in 8 foot lengths. A pile 8 feet long and 4 feet high would be a *double cord* $8' \times 4' \times 8'$. It contains less than two cords of 4-foot length owing to closer piling possible with shorter pieces. Cords of pulp blocks four feet long or two feet long piled just as they fall into the block pile take up more space, so there are various piled block cords depending on the average diameters of blocks and the conditions of piling. A *solid cord* is the actual wood contained in a piled cord of 128 cubic feet—in the Province of Ontario it is 115 cubic feet.

Counter. One employed in a finishing room to count the sheets of paper into reams.

Counter Rolls. Rolls of wrapping paper usually 9 inches in diameter and from 9 to 48 inches in length. So called from the use in shops.

Counter Shaft. A secondary or intermediate shaft by which the desired speed of a machine is attained (jack shaft).

Cracker Pulp. Mechanical pulp in lumps that has been hydraulically pressed—from similarity in appearance to soda crackers.

Cut-to-Register. Paper cut that watermark shall appear in stated position in the sheets.

Daylight Lamp. Equipment by which an artificial light is produced similar in quality to natural light of northern exposure.

De-inking. Process for removing the ink from printed paper and recovering the pulp for re-use.

Diamond Point. A popular design of burr for dressing pulp grinders.

Die-wiping. Paper used for cleaning dies in print shops. A special quality of water finished paper.

Direct Cooking Process for Sulphite Pulp. Also referred to as *quick cook*, or Ritter-Kellner, from its originators. In this process which is that most in practice today, the digester charge of chips and liquor is cooked by the introduction of steam directly into the charge. It is usually understood to mean a cooking time less than ten hours as

opposed to *slow cook* or semi-Mitscherlich of longer periods.

Distillation. The process of separation or purification whereby volatile materials are vaporized by heat and are thereafter condensed by cooling in such a way as to be delivered into another vessel. The act of converting a liquid into a vapor and condensing back to liquid form again.

Dog. An attachment on a saw-carriage by which a log is firmly held while being sawn.

Dolly. A low single wheeled truck without handle on which heavy rolls are transported.

Drier Spear. A long pole with a curved spike on the end, used in connection with the paper machine to remove paper that has wound on a drying cylinder.

Dry Finish. A term used of wrapping paper pertaining to the surface finish which is produced by light calendering without previously being dampened.

Elevator. A vertically operating conveyor.

Emperor. Largest sheet made by hand—48" x 72".

Exhauster. A reciprocating vacuum pump used on milk of lime acid systems.

Facing. The fine wire screen used on the working surface of cylinder molds.

Fan Pump. A centrifugal pump which supplies the stock to the machine screens. In it the stock furnished by the stock pump is mixed with white water in the desired proportion.

Festoons. Paper which has been coated (see coated paper) or printed for wall paper is dried by air currents in a room through which the paper travels supported by slats and hanging therefrom in long loops called festoons.

Fillet. A triangular piece of material used to fill a corner as in a tank or heater tub.

Finisher. An operator who is employed in the finishing room. Usually refers to one who wraps rolls or sheets for shipment.

Finishing Broke. Refuse paper produced in the finishing room.

Flag. The means used to indicate a splice or paster on a roll. Usually a piece of colored paper or cambric.

Flat. Sheets of paper not folded.

Flat Writing. Writing paper of glossy finish and composed of bleached sulphite and soda pulp. The term refers both to the finish and quality.

Friction. A clutch by which the contact is maintained through friction as opposed to the jaw clutch.

Friction Drive. Where power is transmitted through rolling friction by pressure together of two rotating members. Frequently used on saw carriage and live rolls.

Free. Paper is sometimes described as *free* when it is composed entirely of rags and chemical pulp and free from mechanical pulp.

Fruit Wrap. Strong tissue paper in sheets for wrapping fruit for shipment.

Glassine. A transparent wrapping paper produced by calendering imitation parchment paper which has been previously dampened.

Globe Rotary. A rotating digester of spherical shape, 12 to 14 feet in diameter, commonly used for boiling rags, waste paper and straw.

Gyps. Common term for the presence of calcium sulphate or gypsum in milk of lime acid systems. Indicated by a permanent milky color that will not clear on further absorption of SO_2 .

Ham Wrap. A coarse heavy paper composed mostly of waste paper. Used for outer wrappings in meat packing plants.

Header. The round or octagonal sheet of paper used to protect the end of a roll in wrapping. There is usually an inside header and an outer.

Heater. Apparatus consisting of steam pipes and fan with casing for the production of hot air for heating and ventilation.

Herzberg's Stain. A means of distinguishing fibers under the microscope (devised by Herzberg). It consists in treating the fibers on the slide with the following mixture:

Solution A.—20 grams zinc chloride.

10 cubic centimeters water.

Solution B.—2.1 grams potassium iodide.

0.1 grams iodine.

5. cubic centimeters water.

Dissolve A and B separately, then mix and keep in a dark place for several hours before using, or until all sediment is settled, pour off clear liquor. Keep in brown bottle in dark. Fibers are colored as follows:

Groundwood, jute, tow, uncooked manila hemp and any highly lignified fibers are yellow. Well cooked and bleached, sulphite, soda, straw or esparto fibers are blue or dark blue; cotton linen and well bleached manila are wine red.

Hog. A machine for reducing slabs or refuse wood to fine particles for fuel purposes.

The product of the machine, otherwise *hog refuse*.

Hood. Specifically the covering of the drier part of the paper machine. Generally used to carry off the water vapor and heat generated in operation.

Hookaroon. A woodroom implement for handling wood blocks as name implies. Very similar in design to pickaroon but without a striking face.

Hot Pressed. Paper glazed by pressure between heated plates.

Hot Rolled. Paper glazed by hot cylinders.

India Paper. A thin opaque paper used for bibles or other volumes of many pages which are required to give little thickness. See Bible Paper.

Indirect Cooking. Means of cooking chemical pulp either by steam in coils as in the Mitscherlich system for sulphite or by heating the liquor in special heaters outside the digester as in the Morterud system (which see).

Interchangers. Means of cooling or heating liquids by counter-current effects in double walled pipes or similar equipment.

Jack Shaft. See Counter Shaft.

Jog. A term used in connection with rotary cutter. To keep the pile of sheets in regular order as it is being formed.

Jumbo Roll. The trimmed web of paper the full width of the machine rolled as it comes from the reel. Also refers to any large roll intended later to be cut into sheets or re-wound into smaller rolls.

Kerf. The width of the saw cut.

Kicker. A mechanical appliance operated by steam, compressed air or power to move a log from the conveyor with action as term indicates.

Keir. A stationary vessel with perforated false bottom in which cooking liquors which are withdrawn at the bottom are returned at the top. Formerly used in preparing pulp from old papers.

Lay Boy. A machine used in connection with a rotary cutter to arrange the sheets in regular piles and in some cases to count the sheets.

Lighter Bar of a heater. Means by which the roll is raised from the bedplate while furnishing.

Lime Sludge. The refuse of lime from bleach plants, soda and sulphate mills.

Linters. The short cotton fiber attached to the seed, now used as a paper making material.

Loading. See Fillers. Loading paper to add weight only, is not presumably done.

Log Jack. Conveyor by which logs are removed from the pond for loading or to the saw mill.

Lustra Cellulose. Artificial silk prepared by drawing or spinning solutions of nitro cellulose into water to precipitate or render them insoluble and afterwards denitrating by treatment with magnesium sulphide solution.

Machine Broke. Refuse paper produced while paper is being made.

Mill Wrapper. Heavy coarse wrapping paper used for wrapping the paper shipping rolls. Usually of sulphite screenings with some waste paper.

Mimeograph. A waterleaf paper used as its name implies. Usually of soda pulp or pulp recovered by de-inking book paper.

Miter Gears. See Bevel Gears.

Mitscherlich, Doctor A. One of the pioneers of the sulphite pulp industry who devised the method known by his name. He was the first to use brick in sulphite digester linings, and proposed the use of waste liquor in an engine sizing process.

Mitscherlich Pulp. Sulphite pulp cooked in a digester by indirect steam in coils inside the digester. A longer cooking time and lower pressure is used, but the pulp is more easily bleached than by the direct steam or quick cooking process.

Montejus. A pistonless pump for raising acids by compressed air.

Morterud Process (from the inventor). The cooking of chemical pulp by means of liquor which is circulated through a heater located outside the digester. Advantages claimed are that the liquor is not diluted, that there is better circulation and saving of steam, and higher yields.

Mullen Test. The reading in points (energy in pounds per square inch) required to burst a sheet of paper confined in the Mullen testing machine, wherein the sample of paper properly clamped, is acted upon by a rising diaphragm of rubber actuated by hydraulic pressure.

Multiple Effect. Evaporation is based on the principle that the boiling point of a liquid depends on pressure as well as temperature. The steam produced by boiling at atmospheric pressure will itself cause boiling in vessels under reduced pressure or partial vacuum. In M. E. evaporation each "effect" is at a lower pressure or partial vacuum thus securing minimum loss of heat.

Muss. The refuse of rags.

Neutral Size. Rosin size prepared with 15 to 16 per cent soda ash. Containing little or no free rosin.

Nigger. Attachment to the saw carriage used to turn or move the partly sawn log mechanically.

Parchmyn. Imitation parchment.

Paster. A splice in the web of paper, indicated in a roll by a "flag."

Patent Coated. A certain quality of board.

Peavey. A logging implement somewhat similar to a cant-hook but having a spike in the working end of the shaft.

Photostat. Paper for use as indicated. Somewhat similar to photographic or blue-print paper.

Pickaroon. A woodroom implement having a handle about 36 inches long and a head having a striking face opposed to the sharp curved spike.

Plastometer. An instrument for measuring the hardness of the rubber covering of press rolls.

Pop Test. Bursting strength test by the Mullen instrument (from the sound made).

Pope System. An arrangement for transporting the web of paper between the different sections of the paper machine by means of air. From its inventor.

Pulp. Colloquial term in paper mill for mechanical pulp as opposed to sulphite. In timber districts pulpwood as distinguished from saw logs.

Pulp Boards. Cardboard made in a single web, as distinguished from cardboards consisting of several thicknesses or plies.

Quick Cook. See Direct Cooking.

Ream Cutter. Machine for cutting sheets of paper into smaller sizes. Known as "guillotine" or "trimmer."

Red Rosin. A grade of building paper of red color by the use of pigment and made fairly water proof. Composed of waste paper.

Roll Grinder. Machine for grinding press and calender rolls to the desired surface and degree of crown.

Roll Skinner. Operator of a pulp wet machine who cuts the sheet of pulp from the press roll and folds it into a lap.

Ritter Kellner. See Direct Cooking.

Schopper's Instruments. One of these is a machine for measuring tensile strength of paper, another is for finding the resistance to folding.

Scott's Evaporator. A form of multiple effect evaporator largely used in soda pulp mills.

Selenium. At. Wt. 79.2 melting point 217° C. B. pt. 690° C. An element only found in small quantity but often associated with sulphur. Very small amounts have been found exceedingly detrimental in the sulphite cooking process tending to decompose SO₂ and throw it out of useful action in the form of calcium sulphate, acting as a catalyst similarly to free sulphur but to a much greater degree.

Slip. 1. A fluid mixture of clay and water.

2. To arrange sheets of paper by reams while "laying off" from a rotary cutter.

Stuffing. Otherwise called calender staining or padding. The act of applying color to paper as it passes through the calenders.

Sublimation. A form of distillation in which a solid passes to a state of vapor and condenses to a solid again without passing through the liquid state. Sulphur is an example. Flower sulphur is the result of condensing hot sulphur vapors which have not been oxidized due to insufficient supply of air or have been chilled below the kindling temperature before combustion, usually the former, as the boiling point of sulphur is nearly 200° C above its ignition point.

Substance Numbers. Numbers that refer to the weight per ream of certain standard sizes of paper, which make it possible to ensure that paper of same thickness or substance may be secured when ordering other sizes. For example the standard size for writing paper is 17 x 22. If this had been purchased at 20 lbs. per ream and a buyer wanted paper of same substance but different size say 18 x 24, he would order 18 x 24 No. 20.

Surface Sizing. See Tub Sizing.

Top Sized. See "Tub-Sized."

Sizes of Paper

Those given here are the principal surviving names used in Great Britain and occasionally here. There are numerous others of more local use in England for wrapping and millboards. They are chiefly of historic interest in America and in many cases are derived from old watermarks as "Crown" or "Pott," or old methods, as "Post"—from the pile of wet papers just couched.

Paper is now largely ordered or referred to by the size required and its substance number.

Quarto or 4^{to} means as a rule a quarter of the size referred to.

Octavo or 8^{vo} means an eighth.

Duo Decimo or 12^{mo} means one-twelfth.

*Indicates that name and size are the same in United States and Canada.

Name	Use	Size
Antiquarian	Drawing	53 x31
	Plate	53 x31
	Portfolio	53 x33
	Writing	53 x31
Atlas	Drawing and chart	34 x26
	Board	30 x26
	Plate	34 x27
—Extra	Millboard	32½ x26½
—Large	Portfolio	35 x27
Check Folio	Writing	38 x26*
		17 x24
Check Royal	Writing	19 x26
Colombier	Drawing	34½ x24
	Millboards	36 x24
	Plate	35 x24
	Writing	34 x23
Copy	Cartridge	20 x16½
	Writing	20½ x16
Crown	Millboards	16½ x20
	Portfolio	15 x19
	Writing	15 x19
	Wrapping	15 x20
Demy	Drawing	15½ x20
	Writing	16 x21*
	Printing	22½ x17½
		23 x18
	Cartridge	24½ x36½
	Portfolio	22½ x17½
	Wrapping	23 x18
Double Cap	Writing	18 x24
Double Crown	Writing	17 x28*
	Printing	19 x30
	Wrapping	20 x30
Double Demy	Writing	21 x32*
	Printing	36½ x49*
		22½ x35½
	Wrapping	24 x36
Double Elephant	Drawing	26½ x40
	Writing	27 x40
Double Folio (Double Post)	Writing	22 x34*
Double Foolscap	Writing	16½ x26½
	Printing	17 x27
	Blotting	16½ x26½
Double Pott	Writing	15 x25
	Printing	15 x25
Double Royal	Printing	42 x56*
Elephant	Writing	
	Book	23 x28
	Drawing	
	Cartridge	
Emperor	Writing	48 x72
Flat Cap	Writing	14 x17*
Flat Foolscap	Writing	13 x16
*Double, double, quadruple demy United States and Canada.		
†In Great Britain and Canada		
*Double, double Royal, United States and Canada.		
*Canada and United States.		
Flat Letter	Writing	10 x16
Folio (Folio Post)	Writing	17 x22*
Foolscap	Writing	
	Book	13½ x16½
	Drawing	
	Cartridge	14 x18½
Imperial	Cartridge	21 x36
	Writing	23 x31
	Book	22 x30½
	Drawing	
Index Royal	Writing	20 x25
Large Post	Writing	16½ x20½
Medium	Writing	18 x23*
	Printing	18½ x23
	Book	17½ x22½
	Drawing	
Medium Post	Writing	18 x22½
Pinched Post	Writing	14½ x18½
Post	Writing	19 x15½
	Blotting	
	Printing	19½ x15½
Pott	Writing	15 x12½
	Printing	15½ x12½
Royal	Cartridge	
	Writing	19 x24*
	Book	
	Drawing	
	Printing	20 x25
Super Royal	Writing	20 x28*
	Printing	21 x27
	Book	19½ x27½
	Drawing	
Typewriter Double Cap	Cartridge	19½ x27
Wedding Royal	Writing	16 x26
	Writing	20 x24

Association Service

Although the Technical Association does not conduct an employment bureau, it is often asked to suggest competent technical men and superintendents for positions that are open. The secretary is glad to be of such service both to the members and to the pulp and paper manufacturers.

STEAM UTILIZATION IN MODERN NEWS PRINT MILL*

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The purpose of this paper is to show the heat required in the manufacture of news print on a modern basis. It is, in general, a detailed study of the concrete conditions found to exist in a modern paper mill with which the authors have been associated. Other conditions found to exist in paper mills have been treated, however, with a view of showing their bearing upon the different subjects which are covered herein, and also to facilitate comparison by other mills whose installations are different from the one cited.

In general, the importance of heat conservation has not been appreciated in this industry and, in view of the national movement to conserve natural resources, all news print paper mills are in duty bound to study their own particular problem, so that their coal or fuel-oil requirements may be reduced to a minimum. It is hoped, therefore, that this paper may be of assistance to those who, no longer content with operating by rule of thumb, desire to analyze their heat load, in order to assist in conservation and to reduce the cost of manufacture.

A survey made as of January 1, 1922, shows that the United States and Canada have a combined daily output of about 8,500 tons. The tonnage produced during the year 1921 was approximately 2,038,095 tons, and the value of this tonnage, at a representative figure of \$100 a ton, would be \$203,809,500.

On the basis of the familiar statement that "One ton of coal is required to produce one ton of paper," the news print industry has a yearly fuel demand equivalent to about 2,040,000 tons of coal. In the United States, it has been quoted as occupying sixth place in capital invested and value of product, while in horsepower installed it probably ranks fourth.

Description of Mill Investigated

The building housing the two paper machines is 288 feet long by 88 feet wide and has a total height of 45 feet. It is of standard brick and steel construction, with concrete floors and roof, the latter being waterproofed with tar and felt. The paper machines are carried on an operating floor which is 27 feet from the roof. Underneath is a basement having a height of 18 feet, and its floor at grade level. Only the northeast side is exposed, other buildings adjoining the remaining side and ends. The openings in the exposed wall have a total area of 3,000 square feet.

The greater part of the driving mechanism for this installation is located in the basement. The prime movers are steam turbines of the single-stage non-condensing type, direct-connected through flexible couplings to reduction gears, and have a rated capacity of 400 h.p. at a speed of 2,675 r.p.m. This gives a speed reduction of about 7 to 1. The turbo-gears in turn drive an English system of rope transmission, in which each section of the paper machine has its own jackshaft, carrying a cone pulley and sheaves.

By means of belts, power is transmitted from the cone pulleys on the jackshaft to the cone pulleys driving each section of the paper machine. The cone pulleys transmit through a friction clutch and herringbone gears to each of the sections. In the case of the drier sections, further spur gears are used to drive from one drier to the next in the section.

The Paper Machines

The paper machines are of the fourdrinier type, are 166 inches wide and have three presses. The drier sections consist of one fore drier, 24 inches in diameter by 162 inches face; 32 driers, 60 inches in diameter by 162 inches face; and two felt driers, one for each section, 48 inches by 162 inches. All driers are of cast iron,

bored on the inside, and turned and polished on the external surfaces. Each drier is equipped with a dipper, to remove the water of condensation. These machines are designed for a maximum speed of 700 feet per minute.

News print consists of from 70 to 85 per cent of ground wood and the remainder sulphite pulp. After the mixture has been reduced to a consistency of about 1/2 per cent, it is caused to flow onto the wire of the paper machine in amounts carefully regulated so as to finally produce finished paper weighing 32 pounds per ream of 500 sheets, size 24 by 36 inches.

The web is formed by the oscillating motion of the fourdrinier section. Water is removed through the wire, assisted by the capillary attraction of the table rolls, which also act as carriers for the wire. The suction boxes remove a large quantity of water and assist in closing the sheet. The paper then passes between the couch rolls, which press out additional moisture.

In passing through the press sections the sheet is carried on woolen felts between weighted rolls, further reducing the moisture content.

The paper is then ready to enter the driers, where water is removed from the sheet by contact with steam-heated cylinders and is carried through same on canvas felts. The last drier is equipped for cold-water circulation, so as to dampen the sheet before it passes through the calender stack for ironing and polishing, prior to cutting to specified size and winding on cores.

Heat Required for News Print Manufacture

In order to show more clearly the heat required for news print manufacture, simultaneous tests were conducted on one of the previously mentioned machines to determine the heat demand for driving, drying and ventilating.

The data pertaining to the turbine test are given in Table I. The steam supplied to the turbine was the same as that used by the driers. In other words, the turbine water rate balanced the drier heat demand and no auxiliary live steam was required.

TABLE I. TURBINE TEST

Initial steam	
Pressure, lb. per sq. in. abs.	160.7
Temperature, deg. Fahr.	401.3
Total heat per lb., B.t.u.	1217.3
Exhaust steam used by driers	
Pressure, lb. per sq. in. abs.	23.7
Temperature, deg. Fahr.	248.1
Total heat per lb., B.t.u.	1164.7
Lb. steam per hour...	16,822.00
Lb. steam per min...	280.37
B.t.u. per min to turbine	14,747.30
Equivalent B.t.u. per h.p. (as given by manufacturers)	44.17
H.p. developed	334.00
Water rate, lb. per h.p. hr.	50.37

In selecting a suitable prime mover the governing factor is the amount of steam required for drying the paper; consequently it does not follow that the engine or turbine having the lowest water rate is the most suitable.

The water rate of the prime mover, in conjunction with the initial steam pressure and quality, must also be such as to insure approximately dry exhaust steam, at drier pressure, as it is undesirable to have steam of a high moisture or superheat content entering the driers.

Fig 1 has been prepared to show the effect of the water rate of the turbine upon the quality of the exhaust. It will be noted that for the rate existing at the time of the test the exhaust was superheated 11 degrees Fahr., and that when 45 pounds were used per brake horsepower per hour the exhaust steam would be dry-saturated.

In the past it has been very difficult to obtain data showing the horsepower requirements of paper machines, but with the advent

¹Eng., St. Maurice Paper Co., Ltd. Assoc. Mem. Am. Soc. M.E.
²Asst. Engr., St. Maurice Paper Co., Ltd., Assoc. Mem. Am. Soc. M.E.
 *Paper presented at the Springfield Regional Meeting of The American Society of Mechanical Engineers, Springfield, Mass., September 25-27, 1922. Reprinted. Slightly abridged. Mechanical Engineering.

motor drives more information is becoming available. It is impossible to give a formula that will cover all installations, for the power requirements will vary with the type and mechanical design of the machine, the conditions under which it is operated and the efficiency of transmission. The following, however, is cited to show approximately the power demand of the variable-speed drive, and is based on a speed of 100 feet per minute and 100 inches width:

Modern high-speed motor-driven machines, having four presses, forty 72-in. driers and operating at speeds varying between 700 and 1,000 ft. per min.	25 to 30 hp.
Turbine-driven machines, rope-drive transmission, having three presses, thirty-two 60-in. driers, and operating at speeds of 550 to 700 ft. per min.	30 to 34 hp.
Engine-driven machines, Marshall drive, three presses, thirty-two 48-in. driers, and operating at speeds of from 350 to 600 ft. per min.	33 to 38 hp.

Electric Drives for Paper Machines

Much attention of late has been given to electric drives for paper machines, and in some recent installations the electric energy for driving is generated by a hydroelectric plant. The steam required for the driers is then obtained from high-pressure steam reduced through a pressure-reducing valve to a lower pressure, with

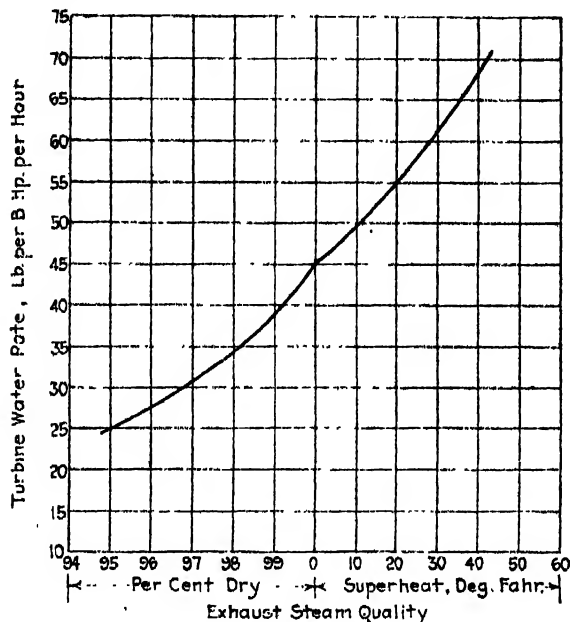


FIG. 1—CURVE SHOWING EFFECT OF WATER RATE ON QUALITY OF EXHAUST

consequent superheat; as will be shown later, however, superheat is not suitable for use in the driers.

Further, unless electrical power can be purchased at a cheap rate, it is not thought that such an installation is economical, and for the purpose of illustrating this point the following computations have been made to determine at what price electrical energy would have to be purchased to be the equivalent of steam assumed to cost \$0.75 per 1,000 pounds.

Referring to Fig. 2, which is based on the test given in Table 1, straight line *A* (205.1 B.t.u.) represents the heat of the drier condensate, and line *C* (1217.3 B.t.u.) the total heat of one pound of steam under the conditions given. Curve *B* shows the relation between the water rate of the turbine and the heat contained in the exhaust available for drying.

AC (1012.2 B.t.u.) therefore represents the heat per pound of steam which would be available for drying if a pressure-reducing valve was used. *BC* (52.6 B.t.u.) represents the amount of heat abstracted from the initial steam in doing work in the turbine.

It will be seen that the quantity expressed by *BC* is small in comparison with that represented by *AB* (959.6 B.t.u.), and that the exhaust steam contains nearly as much heat as the initial steam.

From the preceding data and based on 7,600 operating hours per year, to develop one brake-horsepower-year, 20,125,000 B.t.u. are required. This is equivalent to 19,900 pounds of steam, which, at an assumed cost of 75 cents per 1,000 pounds, makes the steam cost of a horsepower-year approximately \$15.

Assuming the efficiency of the electric drive to be 95 per cent and that of the drive described to be 75 per cent, the cost of purchased electrical power must not exceed \$19 per horsepower-year.

This comparison does not take into consideration interest and depreciation on capital invested or the maintenance and operation costs; but as the initial cost of the electric drive is approximately two and one-half times that of a turbine rope-drive installation, it is thought that if these costs were considered, the comparison would be favorable to the turbine rope drive.

The electrical installation, however, offers many advantages from the standpoint of operation, and with the development of high-speed machines will no doubt become the most acceptable type of drive. It is the opinion of the authors that the application of the motor drive will prove most economical when the necessary electrical power is developed by a turbo-generator, the exhaust from which would be utilized for drying the paper.

The bleeder or extraction type of turbine would have the advantage of greatest flexibility in that a minimum amount of steam would be wasted during periods of light loads, when practically no steam is required in the driers.

Drying Paper

In the drying of paper it is requisite that the moisture be removed gradually to prevent scorching and cockling of the sheet, and this requires a definite temperature gradient through the machine. It is also necessary that the temperature of the paper be kept within certain limits to produce a good, strong sheet.

The authors believe that the logical method to employ in these heat calculations is to base all figures on the pounds of moisture removed from the paper, instead of on the actual production. This is due to the fact that the moisture content is variable, depending upon the number and efficiency of the machine presses and the amount of moisture desired in the finished sheet.

The amount of moisture in the paper entering the drier section generally varies from 65 to 76 per cent, with an average of about 72 per cent. The amount of moisture in the finished sheet varies from 5 to 10 per cent, with an average of about 8 per cent. It is important that enough moisture remain in the finished sheet to insure proper finish and strength.

By the use of the following formula the number of pounds of moisture to be removed per pound of finished paper can be readily determined:

$$W = \frac{M_1 - M_2}{100 - M_1}$$

where *W* = pounds of moisture removed per pound of dried paper
*M*₁ = percentage of moisture in sheet entering drier section, and

*M*₂ = percentage of moisture in dried sheet.

It is important that as much moisture as possible be removed from the sheet before it enters the driers. It should be understood, however, that there are limitations to the amount of moisture that can be removed by mechanical means, namely, the possibility of crushing the delicate web of newsprint and the effect on the life of the press felts. Each mill, by considering the above in conjunction with the cost of steam, should determine the most efficient point of moisture removal.

In order to determine the economical life of machine clothing, in relation to steam cost for drying, a study of results obtained in several mills was made. This showed that the relation between life of felts and the percentage of moisture entering the driers followed a straight line, and that it is the combined felt-days of all the press

felts which determines the moisture in the sheet entering the driers. This is a fortunate relation, in that the operating days of each of the three press felts is seldom the same at any one time.

Fig. 3 shows the relation between the combined felt-days of the three press felts and the average percentage of moisture leaving the presses for the period considered; this period being taken as one-third of the combined felt-days.

Table 2 is self-explanatory and shows the relation between com-

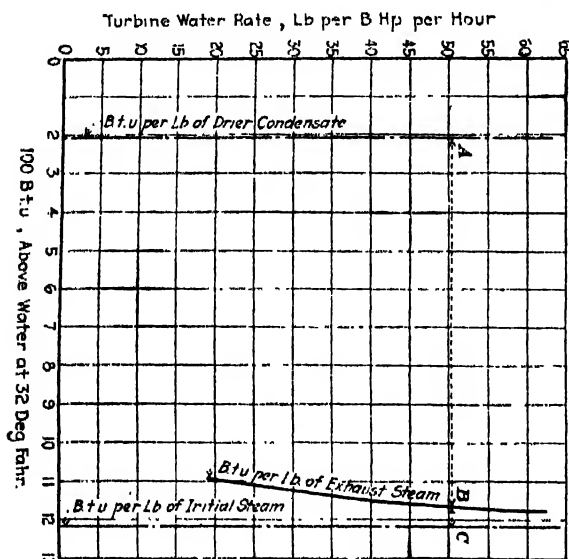


FIG. 2—CURVE SHOWING B.T.U. PER POUND OF EXHAUST STEAM AVAILABLE FOR DRIERS

bined felt-days of the three presses and the cost per day, in dollars, for steam and felts. The calculated costs do not take into account the labor and the loss of production due to changing clothing. Further, this study only applies for a particular period of fixed steam and machine-clothing costs, and should be revised as conditions change.

Some plants, thinking to economize, have tried to dispense with drier felts. This procedure has not proved satisfactory, for the reason that intimate contact of the sheet with the drier surface is

TABLE 2. COST OF STEAM AND FELTS

Felt-days	% Moisture entering driers at end of period	Avg. % moisture for period	Period in days (1) ÷ 3	Moisture evap per lb. of paper (5)	Lb steam per day $F \times A \times 212 \times 1361$ (5) $\times 5400 \times 24 \times 1361$	Cost of steam per day, Dollars. (6) $\times 0.75$	Cost of press clothing per day, Dollars (8)	Cost of steam and felts per day, Dollars. (7) + (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
30	69.60	68.40	10.00	1.911	347,360	260.52	68.00	328.52
35	69.95	68.58	11.67	1.928	350,440	262.83	58.20	321.03
40	70.30	68.75	13.33	1.944	353,347	265.01	51.00	316.01
45	70.75	68.98	15.00	1.966	357,347	268.01	45.35	313.36
50	71.10	69.15	16.67	1.982	360,253	270.19	40.80	310.99
55	71.45	69.33	18.33	2.000	363,533	272.65	37.10	309.75
60	71.90	69.55	20.00	2.021	367,347	275.51	34.00	309.51
65	72.25	69.78	21.67	2.039	370,613	277.96	31.40	309.36
70	72.65	69.93	23.33	2.060	374,440	280.83	29.10	309.93
75	73.05	70.13	25.00	2.080	378,067	283.55	27.20	310.75
80	73.45	70.33	26.67	2.101	381,893	286.42	25.50	311.92
90	74.20	70.70	30.00	2.140	388,973	291.73	22.65	314.38
100	75.00	71.10	33.33	2.183	396,800	297.60	20.40	318.00
110	75.80	71.50	36.67	2.228	404,973	303.73	18.55	322.28
120	76.60	71.90	40.00	2.274	413,333	310.00	17.00	327.00

NOTE: 8 per cent moisture in dried paper. Steam cost assumed at \$0.75 per 1,000 lb. No tests are available for moisture entering driers with complete new press clothing, but from a study of results which might be expected, it is assumed that moisture entering under these conditions would be 67.2 per cent.

of vast importance in heat transfer. The drier felt also assists in the removal of moisture.

It has been noted that a new drier felt results in a decreased steam

consumption of about 300 pounds per ton of production as compared with an old one. This is due to the fact that as the felt ages, the meshes gradually become closed.

In investigating the action of the driers, that portion of them in intimate contact with the sheet has been termed the "effective" surface, while the remainder has been called "free" surface. In making comparisons between different machines the ratio of the effective surface to the total surface should always be stated.

The amount of radiating surface which does no direct useful work increases with the drier diameter, and to show the effect of diameter on effective surface, Table 3 has been prepared for a 166-inch drier with an actual working face of 156 inches. This table is of interest in connection with the design of modern machines, where the high speed required must be obtained either through large diameter of driers or the greater relative speed of those of smaller diameter.

TABLE 3. EFFECT OF DRIER DIAMETER ON EFFECTIVE SURFACE

Diam. of driers, ft.	Total surface in sq. ft. (T)	Effective surface in sq. ft. (E)	Ratio $\frac{E}{T}$
4	199	104	0.523
5	257	130	0.506
6	317	156	0.492

To obtain the maximum value of the ratio E/T , the drier section should be designed so as to obtain as large an arc of contact as possible, consistent with ease of handling paper and changing drier felts. Experience shows that with an open pit under the drier section the life of the felts is materially increased, owing to the better ventilation afforded.

There are two methods in general use for removing condensation from driers, namely, siphons and revolving dippers; and opinions are at variance as to which is to be preferred. Unfortunately,

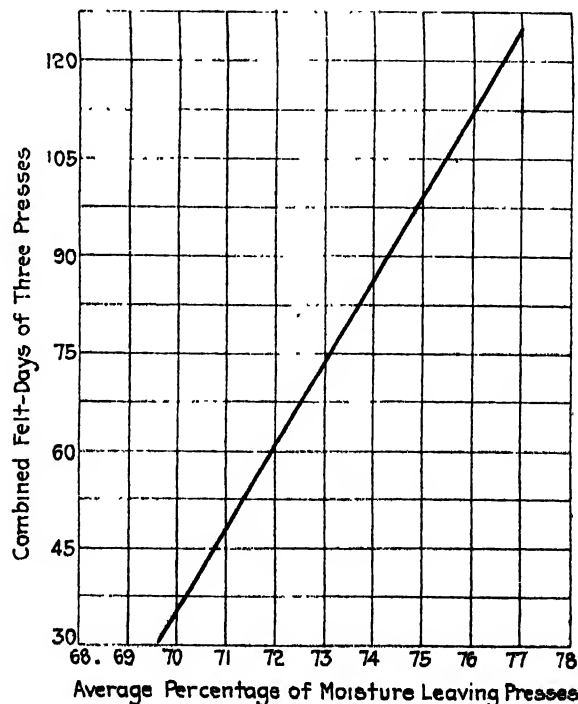


FIG. 3—CURVE SHOWING LIFE OF FELTS IN RELATION TO MOISTURE IN SHEET LEAVING PRESSES

neither system is capable of completely removing all the condensation, and there is always present a small depth of water in the bottom of the driers.

Owing to the fact that the machines must be operated from the front side, it is the practice to locate the inlet and condensation outlet in the back side of each drier. This arrangement does not

permit of a uniform or rapid circulation of steam within the driers. It is the authors' opinion that some system whereby a more rapid circulation of steam were made possible, would increase to a considerable extent the heat transfer. This could be accomplished, if it were possible to connect a number of driers in series in such a manner that the circulation of steam would follow the desired temperature gradient.

Air and other incondensable vapors, allowed to accumulate in the

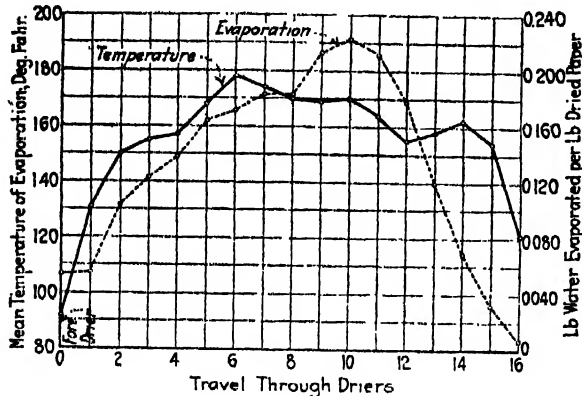


FIG. 4—CURVES SHOWING TEMPERATURE OF EVAPORATION AND WATER EVAPORATED IN DRIERS

driers, retard heat transmission and also result in unequal temperature across the drier face. A suitable air valve should be installed to permit of rapid extraction, without allowing steam to pass.

Absolutely clean internal surfaces are required to obtain maximum heat transfer. With engine-driven machines the internal surface of the driers becomes coated with a film of oil, as oil separators do not completely remove all the lubricant from the exhaust. The turbine, however, requires no internal lubrication, and is therefore superior to a steam engine as a prime mover. The external surfaces must also be kept clean of all accumulations of dirt, grease and lint from the paper.

Superheated steam, while undoubtedly of great value for prime movers, is not desirable for drying purposes, in that it is similar in its properties to gases and parts with its heat much less readily than saturated steam. No doubt some will contend that superheated steam would tend to become saturated by contact with the condensate, but it is thought that this would take place to a very limited extent. The amount of water in contact with the steam varying from time to time, would result in variations in temperature within the drier. Some expert papermakers contend that superheated steam produces an inferior quality of news print as compared with that dried by saturated steam.

The test of the drier part of the machine is given in Table 4. As shown by this table, 269,043 B.t.u. were absorbed by the driers, equivalent to 1,342 B.t.u. per pound of moisture evaporated. It will be shown later that the air in passing through the drier sections absorbed 272,837 B.t.u. per minute, equivalent to 1,361 B.t.u. per pound of moisture evaporated. The higher value has been used in subsequent calculations.

TABLE 4. TESTS OF DRIER

Working width, inches, (deckle).....	156
Speed, ft. per min.....	650
Effective heating surface, sq. ft.....	4401
Total surface, sq. ft.....	8272
Ratio of effective to total surface.....	0.532
Weight of paper (lb. per 500 sheets 25 X 36 in.).....	32
Lb. paper dried per minute.....	90
Percentage of moisture in sheet entering driers.....	71.5
Percentage of moisture in sheet leaving driers.....	8.0
Lb. moisture evaporated per lb. of dried paper.....	2.228
Lb. moisture evaporated per minute.....	200.5
Steam pressure in driers, lb. per sq. in. abs.....	23.7
Temperature of steam in driers, deg. Fahr.....	248.1
Total heat of steam supplied to driers, B.t.u. per lb.....	1164.7
Heat of condensate, B.t.u. per lb.....	205.1
B.t.u. absorbed by driers per lb. of steam.....	959.6
Lb. steam per hour to driers.....	16,822
Lb. steam per minute to driers.....	280.37
B.t.u. absorbed by driers per minute.....	269,043
B.t.u. absorbed by driers per lb. of moisture evaporated.....	1342

At the time that the test was conducted to determine the heat absorbed by the driers, data were also obtained giving the temperature gradient throughout the driers and the amount of moisture evaporated per pound of dried paper in each increment of travel, as shown by Fig. 4. By integration the theoretical amount of heat required to evaporate the moisture was determined, as shown by Table 5.

It will be noted in this table that 2.228 pounds of water were evaporated from the sheet in its complete travel, and that the theoretical heat required to do this work amounted to 2,412 B.t.u. Therefore, the theoretical heat required to evaporate one pound of moisture from the sheet, under the conditions as shown, is 1,083 B.t.u.

In making drier calculations it is well to remember that the only useful work performed is the evaporation of moisture from the sheet, and that therefore the theoretical amount, as determined by the conditions of the test, divided by the heat supplied, must give the efficiency of the driers.

Based on the figure of 1,342 B.t.u., determined by the drier test, the efficiency is 80.7 per cent, while on the basis of 1,361 B.t.u., derived from the air test, it is 79.6 per cent.

To dry paper efficiently the temperature conditions throughout the drier sections must be closely regulated. In the past, temperature control has been obtained by means of a thermostatic valve, which was dependent upon the temperature existing in one drier only. While this has given good results, the latest practice calls for sectional control, which has improved the ease of regulation.

TABLE 5. THEORETICAL HEAT REQUIREMENTS OF DRIERS PER LB. OF PAPER

Drier No.	Moisture leaving drier	% stock sheet	Lb. water per 0.92 lb. stock	Lb. water evaporated in travel through drier	Mean temp. of evap., deg. Fahr.	Latent heat	B.t.u.	Heat of liquid
Fore	171.5	28.5	12,308	.....	180	1040.0	56.16	0.65
1	71.0	29.0	2,254	0.054	92	1018.2	56.00	2.81
2	70.5	29.5	2,199	0.055	131	1007.4	103.76	7.21
3	69.5	30.5	2,096	0.103	150	1004.5	123.55	9.23
4	68.2	31.8	1,973	0.123	155	1003.4	138.47	10.63
5	66.6	33.4	1,835	0.138	157	997.0	163.51	14.43
6	64.5	35.5	1,671	0.164	168	991.1	169.48	16.76
7	62.0	38.0	1,500	0.171	178	993.5	181.81	17.20
8	59.0	41.0	1,317	0.183	174	995.8	182.63	16.47
9	55.2	44.8	1,136	0.1834	170	996.4	212.83	19.05
10	50.0	50.0	0.9200	0.2136	169	995.8	222.16	20.07
11	43.1	56.9	0.6969	0.2231	170	999.3	212.15	17.81
12	34.5	65.5	0.4846	0.2123	164	1004.5	178.70	13.34
13	25.0	75.0	0.3067	0.1779	155	1002.8	119.93	9.33
14	16.9	83.1	0.1871	0.1196	158	1001.1	68.88	5.64
15	11.3	88.7	0.1183	0.0688	162	1005.1	31.86	2.35
16	8.6	91.4	0.0866	0.0317	154	1023.9	6.76	0.27
16	8.0	92.0	0.0800	0.0966	121			
Total.....				2.2280			2228.64	183.25

¹ Condition of sheet entering the drier.

Without suitable experimental equipment it is very difficult to proportion the total heat transfer into that quantity absorbed by the sheet and that acquired by the surrounding air. It is thought that these quantities, once determined, would be of great assistance to the designers of paper machines, as at present, so far as the authors are aware, all calculations are based on an arbitrary figure.

Heating and Ventilating

Ventilating air supplied to a machine room may be considered as serving three distinct purposes:

- 1.—It maintains such temperatures and humidities within the room that the operators may perform their work in comfort.
- 2.—During the period of low outside temperature it supplies sufficient heat to replace the radiation loss from the building.
- 3.—It acts as a carrier for the moisture liberated by the machine, so that this moisture is conveyed to the outside air without condensation taking place in the room.

The quantity of air supplied to a machine room depends to a large degree upon the desired machine-room temperature and humidity; and it will be found for the ordinary room, all other conditions

relative humidity (R. H.) as high as 100 per cent. If the final air had a relative humidity of 80 per cent, the critical temperature would be 78 degrees Fahr.

By combining the quantity of heat per pound of air required by the machine with that necessary to replace the radiation loss from the building, the total heat per pound of air required for the purpose of ventilation can be determined.

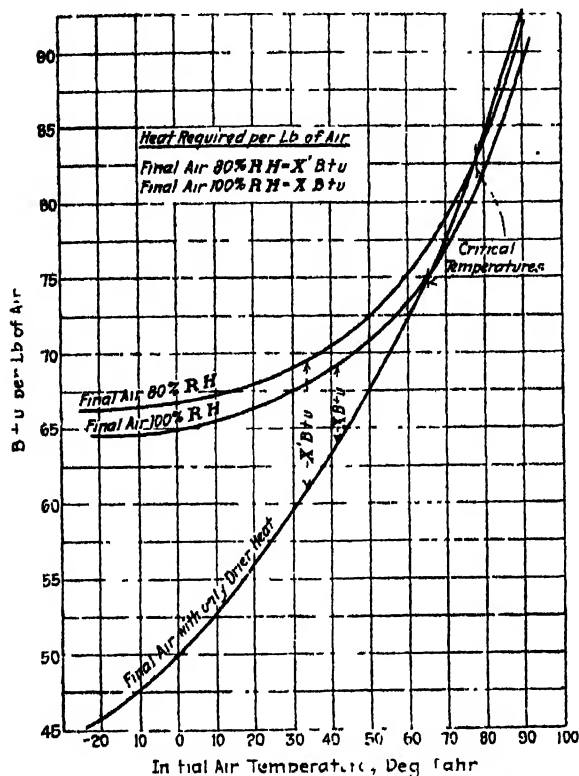


FIG. 5—CURVES SHOWING HEAT REQUIRED FOR PAPER-MACHINE VENTILATION

The important factor which influences the ventilating requirements of a paper mill is the amount of moisture liberated by the machine per unit of time. This in turn is dependent upon

- 1.—Speed of the machine.
- 2.—Moisture in sheet entering the driers.
- 3.—Moisture in sheet leaving the driers.
- 4.—Moisture absorbed from the wet end

The old practice, therefore, of specifying paper-mill ventilation on a basis of so many minutes air change, without due regard to the moisture liberated, is not correct, as it is obvious that the amount of moisture liberated in two machine rooms of the same size might be entirely different.

Much of late has been written regarding the proper distribution of air in the machine room, but it is not the intention of the authors to discuss this further, except to state that, in their opinion, the greater part of the ventilating air should be delivered in the vicinity of the driers and the wet end, so that the moisture may be confined at its source. Further, that sufficient warm dry air should be supplied to the roof and all pockets, such as monitors, in order that the moisture-laden air shall not become chilled below the dewpoint, causing drip.

The amount of heat lost to the process by the expelled ventilating air is in all probability the greatest unpardonable waste in the manufacture of paper.

By referring to Table 7, it can be seen that, with initial air at 10 degrees Fahr., and of 70 per cent relative humidity, the total heat

above zero degree Fahr. is 2.5 B.t.u. per pound, and the heat content of a pound of final air at 100 per cent relative humidity is 65.5 B.t.u. above 0 degree Fahr., the difference in the heat content per pound of air being 63 B.t.u.

Only 12.8 B.t.u. per pound, however, have to be furnished in order to preheat the incoming air, the balance of this difference being supplied by the driers. It is here that an economizer could be used to great advantage in reclaiming from the expelled air enough heat to condition the incoming air.

Owing to the high relative humidity of the outgoing air, a few degrees' drop in temperature in the economizer would be sufficient to supply heat necessary to preheat the incoming air, with the result that no live or exhaust steam would be required for ventilation.

The saving in operating cost which would result in winter from such an installation is apparent when it is considered that, for the conditions under consideration, at least 5,900 pounds of dry steam, at 10 pounds per square inch pressure, would be required per hour for preheating the ventilating air when the outside temperature was 10 degrees Fahr. and the relative humidity 70 per cent.

Fig. 6 shows for the period of one year the manufacturing and heating load in pounds of steam per ton of product, also the mean monthly temperature which prevailed. It is interesting to note the relative importance of the heating load, and it can be readily realized that the manufacturing cost could be considerably reduced if, by the installation of an economizer, this were done away with.

Conclusion

This paper does not make a complete survey of the subject under discussion, but the authors, in seeking to collect material for

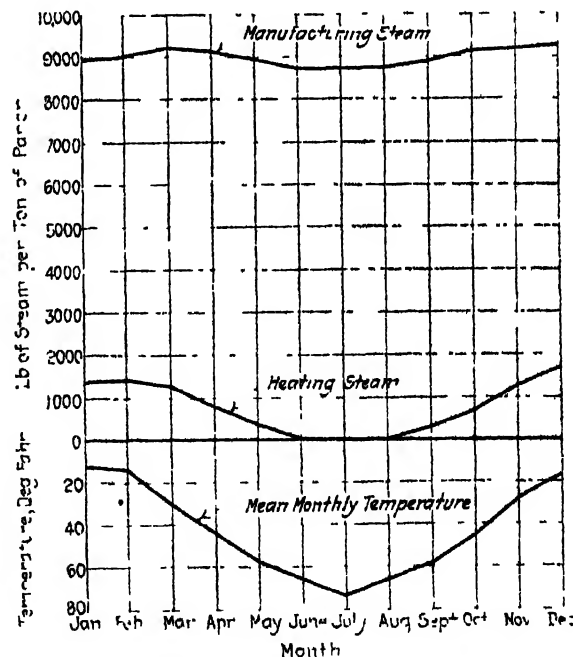


FIG. 6—CURVES SHOWING TEMPERATURE AND STEAM FOR MANUFACTURING AND HEATING, BY MONTHS

the subject-matter, have been impressed with the lack of detailed information which is available. It may be that some mills have studied their problems in great detail, but if so, the information is treated as strictly confidential. It can be understood that, once a paper machine is installed, the owners are reluctant to decrease production while making experimental tests. Therefore, paper-machine manufacturers are unable, in certain respects, to procure reliable operating data upon which to base their designs.

TRIMBEY AND TIBBITTS PROPORTIONING AND METERING SYSTEM FOR PAPER STOCK*

By E. J. TRIMBEY, TRIMBEY MACHINE WORKS, GLENS FALLS, N. Y.

The paper mill equipped for using its own pulp in the form of soft stock has had distinct advantages over its competitors who used lap pulp, as regards cost of handling, but the savings made in this manner have been partly offset by the loss due to the use of more than the necessary amount of the more expensive sulphite caused by variations in the proportions of the stock mixture used.

When using lap pulp the furnish can be weighed but with soft stock proportional volumes must be the measure and changes in the consistency of one or of both of the pulp ingredients cause wide variations in the proportions used. For a number of years the up-to-date mills have used automatic consistency regulators which satisfactorily control the addition of the proper amount of water at the suction side of the stock pump to give pulp of a uniform consistency for beater or mixing tank furnish.

In most mills the mixing tank is also used as a measuring tank, gauges being placed on the sides of the tank to indicate the amounts of each kind of pulp to be used in each batch. These tanks require the constant attendance of one or more men and the accuracy of the furnish even with uniform consistency is dependent upon the care with which these men perform their work and there is no certainty as to how much of each kind of pulp has been used. From the accountant's standpoint the only information available at the end of the week or month is that so many tons of paper have been made, so many "cooks" of sulphite blown, and so many cords of wood delivered to the ground wood mill. It is practically impossible to compute yields per cord, or if more than one grade of paper is being made, to accurately separate the pulp furnish to arrive at actual costs of the different grades. It would seem that where soft stock is used refined accounting systems to determine

etc., are mounted on a wooden base with a mixing compartment beneath. The stock discharged from the two meters flows together over suitable baffles and with the color, alum, etc., is quite thoroughly mixed before going to the machine storage chest or to the jordan.

The stock meters are driven through worm and spur gears from

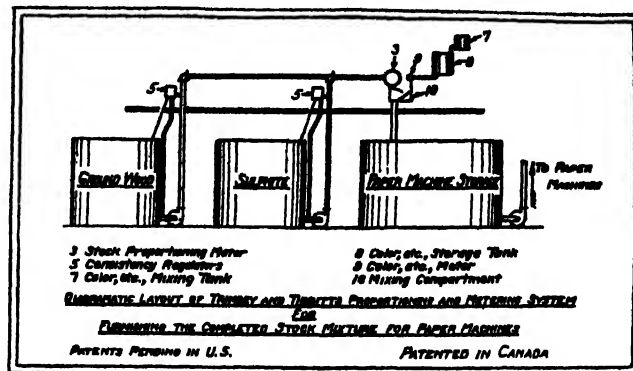


Fig. 2

D. C. motors having a speed range of 2:1 and all three motors are supplied from a motor-generator set provided with a suitable rheostat for giving a further speed range of 2:1, making an extreme range of 4:1 in the motor speeds. By shifting the rheostats on the individual motors any desired proportions of ground wood and sulphite can be secured and the color, alum, etc., can be varied individually by screw-adjustment without shutting down the motor driving this group of small meters.

With proportions once set, the speed of all motors can be increased or decreased at the same time and in the same proportion by shifting the rheostat on the generator, thus giving a ready means of varying the total supply to meet the demands of the paper machine or machines. At the same time if a change in furnish is wanted, any one of the ingredients can be changed without shutting down and without changing the others.

The system as furnished consists of suitable meter units mounted together, the motor-generator set and a slate switchboard with all the necessary switches and control apparatus.

Value of Meters and Regulators

With stock of a given consistency and a record of the volumetric amounts used as given by the recording counters, the accounting department has data which can be used, and the operating end of the mill secures, through the use of the meters and the consistency regulators, a uniform furnish with increased production and improved quality.

Where the problem is to add a given weight of pulp in the form of soft stock to each meter, the meter unit with its motor drive is located above the beaters so that the stock as metered will flow by gravity. In this case the motor runs at full speed when in use and is controlled by means of a magnetic switch with push button con-

(Continued on page 64)



Fig. 1

costs must be more or less of a waste of time and money as long as the stock proportions are left to the good judgment and care of the beater room attendant with no check on consistencies or volumes used.

Construction of Units

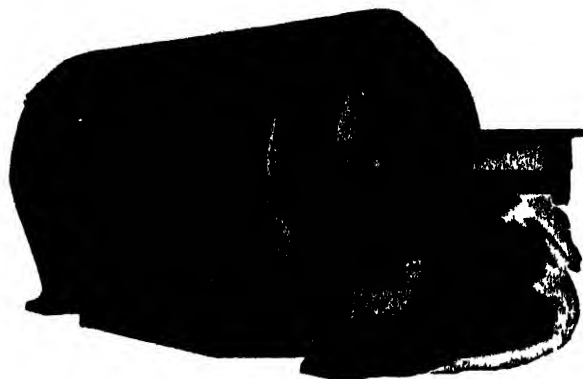
The complete units for ground wood, for sulphite and for color,

* Read at the meeting of the Technical Association of the Pulp and Paper Industry at the National Exposition of Chemical Industries, Grand Central Palace, New York, September 11-16, 1922.

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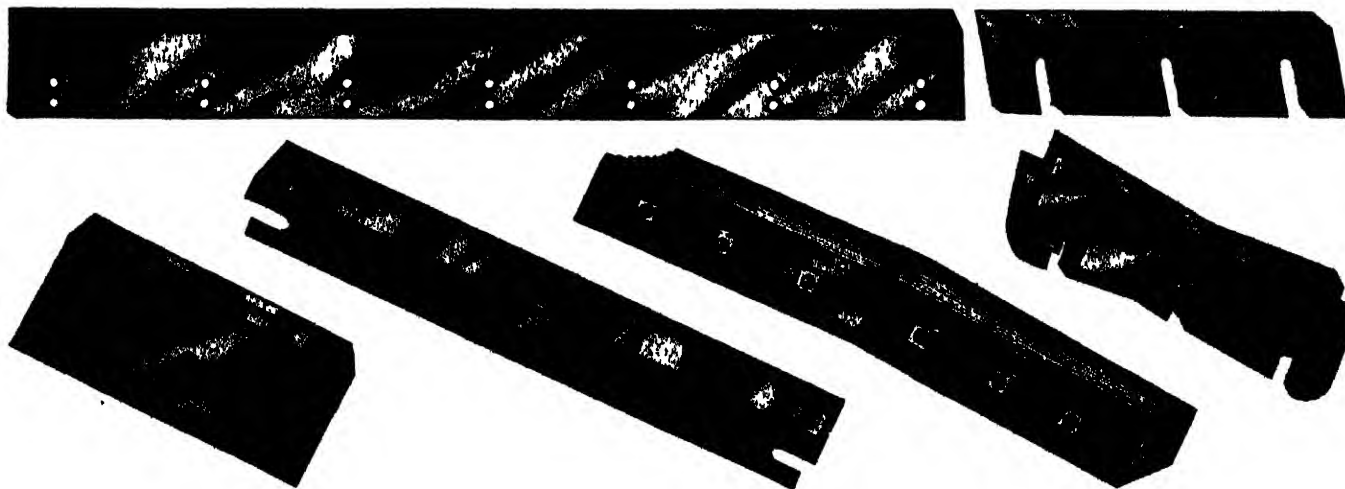


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Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Properties, Chemistry and Testing of Raw Materials and Finished Products

Determination of Cellulose in Wood By Means of Chlorine in Carbon Tetrachloride.—Emil Meuser and H. Casseus. *Papierfabr.*, xx, Fest. u. Auslaundheft, 80-93 (1922). Abridged. Translation by C. J. West in *PAPER TRADE J.*, lxxv, No. 9, 47-48 (Aug. 31, 1922). The Cross and Bevan chlorination method is simplified by using a solution of chlorine (8.10 g.) in carbon tetrachloride (100 g.). The wood should be ground to a meal of medium fineness; too coarse particles are unevenly attacked, and too fine particles interfere with subsequent filtrations. The fats and resins need not be extracted. The testing was carried out in a special apparatus consisting of a short wide cylindrical separating funnel, the lower part of which is ground to fit the upper part of a Gooch crucible. It is detached for shaking and attached for filtration and extraction. About 1.5 g. of wood is treated with 50 g. of the chlorine solution. Three chlorinations are carried out. After each chlorination the carbon tetrachloride is filtered off, and the residue is washed with alcohol and with water and is then treated with a 2 per cent sodium sulphite solution. Extremely concordant results were obtained.—I. G.

Use of "Pickerel-Weed" for the Manufacture of Pulp. P. A. I. Golmann. Fr. patent 2,525,172. *Mon. Papeterie Française*, liii, 127-128 (March 1, 1922).—Claims the use of "Pickerel-weed" (*Pontederia cordata*) as a raw material for the manufacture of textiles or of paper pulp.—A. P.-C.

The Differentiation of Hemps, Flaxes, and Other Fibers and Textiles.—*Papeterie*, xlv, 633-637 (July 25, 1922).—A table is given of the color reactions of various grades of hemp, flax, and other textile fibers, and of chemical wood pulps, with a solution of: phloroglucinol 1.26 g., water 1,000 cc., concentrated hydrochloric acid 200 cc. Observations need not be made under the microscope.—A. P.-C.

Paper Pulp from Straw. C. and J. Bache-Wiig. U. S. A. patent 1,418,353 (June 6, 1922).—The straw is softened by means of a salt solution, subjected to a kollergang treatment, digested with sulphite solution, and given a second kollergang treatment. It is then ready for paper making.—I. G.

The Chemical Analysis of Paper Pulp. F. M. Bouvier. *Mon. Papeterie Française*, liii, 170-171, 198-199, 211-222 (April 1 and 15, May 1, 1922). Brief descriptions of the methods of determining moisture, ash, cellulose, lignin, resins, fats and waxes, gums, free acidity, copper number, aldehyde number, acid number, SO₂ number (the amount of SO₂ required to decolorize the amount of fuchsin fixed by 100 g. of pulp), free and combined chlorine, and sulphur compounds.—A. P.-C.

Determination of Free Chlorine and Hypochlorous Acid in Concentrated Salt Solutions. M. C. Taylor and C. A. Gammal, Mathieson Alkali Works. *J. Ind. Eng. Chem.*, xiv, 632-636 (July, 1922).—The method described involves three steps: (1) Determination of the "available" (free chlorine and chlorine as NaOCl and HOCl) chlorine in the sample with potassium iodide and thio-sulphate, using a known excess of standard acid; (2) Determination of the excess of acid remaining after the thio-sulphate titration by titrating the iodine liberated from Kjeldahl's solution (a mixture of potassium iodate and iodide); (3) An aeration step in which the rate of washing of free chlorine is accurately measured. The method and the accuracy of the results are discussed at some length.—A. P.-C.

Bleaching By Means of Chlorine and Chlorine Compounds.—R. Fournier. *Papier*, xxv, 253-257, 296-301. (June and July, 1922).—A general description of the properties of chlorine bleaching compounds and of their utilization in the paper industry.—A. P.-C.

Aluminum Compounds for Sizing Paper. G. Muth. Ger. patent 345,315. Addition to Ger. patent 319,420. The treatment of aluminum compounds as described in the chief patent is more expeditiously carried out in closed vessels under a high temperature and pressure.—I. G.

Testing the Sizing of Paper. D. Mourreaux. *Mon. Papeterie Française*, liii, 216-218 (May 1, 1922).—The author suggests the following method: Draw three lines of equal length but of increasing thickness by means of a round-pointed (Leonardt) pen, and note the time of drying of the various lines or portions of lines. When all the lines are dry, observe the time of drying of the line or portion of line which has penetrated to the other side of the paper. It would also be necessary to note the atmospheric humidity, as it has a very appreciable effect on the results of the test.—A. P.-C.

Rational Use of Filter Papers. E. J. Guild, Chief Chemist, W. and R. Balston, Ltd. *Chem. Trade J.*, lxx, 721-722 (June 16, 1922).—A brief discussion of the qualities of filter papers, with practical hints as to choosing the proper grades for various classes of work.—A. P.-C.

Wood Preparing and Equipment

Barking Drum. H. T. Holm. Can. patent 221,886, Aug. 8, 1922.—The drum consists essentially of a solid cylindrical metal shell, the inlet opening of which is smaller than the outlet. One or more jets of water are provided, entering at the inlet in a more or less axial direction. Oblique ribs are secured to the inner side of the shell. The bark is suitably separated from the water, which is then used over again.—A. P.-C.

Acid Processes of Pulp Manufacture and Equipment

Estimations of Sulphur Dioxide.—G. Basil Barham. *Chem. News*, cxxiv, 279-281 (1922; *Chem. Soc. Abs.*, cxxii, Pt. 1, 520 (July, 1922)). Titration with potassium permanganate under definite conditions is recommended for the estimation of SO₂. Dilute sulphuric acid is treated with a definite volume of standard permanganate, and the mixture is then divided into two equal portions; the SO₂ solution under examination is added to one portion and the permanganate solution is added until the coloration is again equal in intensity to that of the other portion which has been reserved for comparison. To ensure the coloration being of the same tint, the acid solution should be reduced and oxidized once or twice (with sulphite and permanganate solutions respectively) before it is used for the actual determination.—A. P.-C.

Decomposition of Sulphite Waste Liquor. K. Morch. U. S. A. patent 1,415,843, May 9, 1922. Same as Can. patent 221,733, Aug. 1, 1922.—I. G.

Utilization of Sulphite Waste Liquor. E. Muerbe. Ger. patent 347,658. Addition to Ger. patent 344,955.—On entering the separator described in the main patent (See this journal, lxxiv, No. 21, 59, May 25, 1922,) the liquor is mixed with a substance, such as sodium bisulphate, in a finely divided form, which assists the liberation of SO₂. Suction is applied to the condenser to prevent back pressure. Nearly 30 per cent of the sulphur present in the original liquor can be recovered in a useful form. Almost

ROGERS WET MACHINE

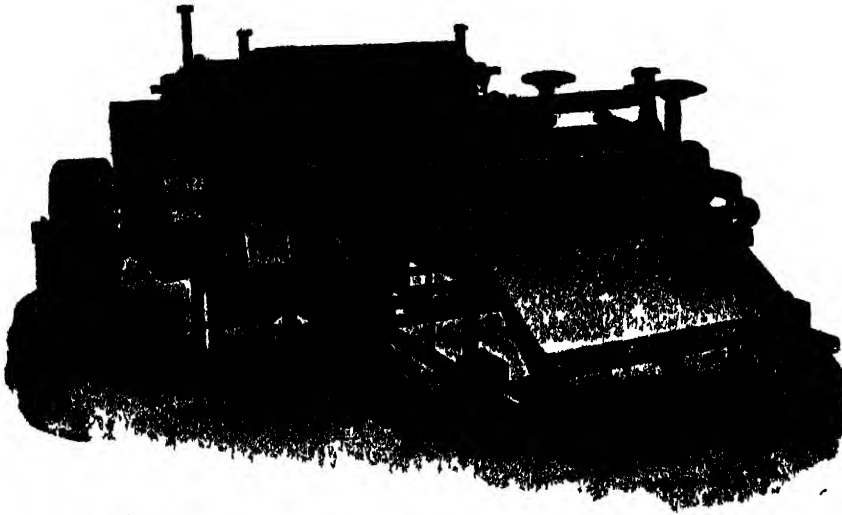


Illustration Shows Rogers Double Press Wet Machine

FOR CHEMICAL PULP—including Sulphite, Sulphate, Soda, also Cotton and Waste Paper fiber.

TYPES—Single and Double Press 72" wide.

CAPACITY—either type 25-30 tons air dry stock per 24 hours.

SHEETS produced by the Double Press Machine uniformly 48% dry. By the Single Press Machine uniformly 40% dry. There is no fold to contain excessive moisture. Sheets are handy size, 33"x36", and are folded once into most convenient bundles for storage, for the heater or for shipping. By this great capacity, high dry test, small amount of floor space per ton pulp produced, exceedingly low cost for labor and maintenance, users are assured that the machine will completely pay for itself within one year, and are promised a handsome return on their investment.

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perfect separation is obtained of free and loosely-combined SO_2 , and also of that combined with lime. All the calcium present is recovered as calcium sulphate in a finely divided state.—I. G.

Paper Machine Press. R. E. Wagner, assignor to Aktiebolaget Karlstads Mekaniska Verkstads. Can. patent 221,949, Aug. 8, 1922. The rolls are provided with circumferential grooves and suction is applied by a suitable device adjacent to the surface of one or both rolls and projecting into the angle between the roll and the web.—A. P.-C.

Asphalt Shingle Roofing and Machine for Making Same. J. T. Sullivan, Can. patent 221,937, Aug. 8, 1922. In surfacing the roofing with crushed stone, etc., uncovered lines are left on the saturated felt. The finished roofing is not cut into separate shingles but is applied in strips, the lines giving the same effect as separate shingles.—A. P.-C.

Translucent Paper. F. W. Hochstetter. U. S. A. Patent 1,419,379, June 13, 1922. Paper is rendered translucent by treatment with a composition containing 10 parts of linseed oil or any other similar drying oil, 3 parts of bleached shellac, and 20 parts of absolute alcohol.—I. G.

Rendering Paper and Paper Containers Greaseproof. W. L. Wright, assignor to Scalright Co. U. S. A. patent 1,417,708, May 30, 1922. The paper material is coated by means of a nearly saturated sugar solution containing an appropriate amount of a soluble adhesive.—I. G.

Articles Produced from Pulp and Paper

Method of and Apparatus for Making Pulp Articles. M. Jaegar, assignor to Anchor Cap and Closure Corporation. Can. patent 221,953, Aug. 8, 1922. The pulp is supplied to a wire mold by forcing it by means of compressed air. When the article is sufficiently built up, compressed air is admitted to the inside of the mold; thus compacting and drying the fibers. The drying may be hastened by using hot compressed air.—A. P.-C.

Machine for Making Paper Bags. L. W. Welsford, assignor to J. G. Gates. Can. patent 222,048, Aug. 8, 1922. —A. P.-C.

Resins and Resinous Substances from Cellulose. Zellstoff-fabrik Waldhof and V. Hottenroth. Ger. patent 353,380, May 16, 1922. Cellulose is treated with acids such as sulphuric to convert it into products of a resinous character. The residues are converted into a decolorizing carbon.—I. G.

General

Method of Making Emulsions.—J. A. De Cew, assignor to Process Engineers, Ltd. Can. patent 218,270, May 2, 1922.—The substance to be emulsified is brought into contact with an alkaline solution under pressure in an atomizer at about 180°F ., the amount of alkali being insufficient to produce complete saponification. The emulsion is then cooled by mixing with cold water. The process is suitable for the preparation of sizing "solutions."—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals from Which Abstracts Have Been Prepared for This Issue

Chem. News.....	The Chemical News and Journal of Physical Science 97 Chancery Lane, London, E. C. 4, England.
Chem. Soc. Abs.....	Journal of the Chemical Society—Abstracts. Gurney & Jackson, 33 Paternoster Row, London, E. C. 4, England.
Chem. Trade J.....	Chemical Trade Journal and Chemical Engineer. Davis Bros., 265 Strand, London, W. C. 2, England.
J. Ind. Eng. Chem.....	The Journal of Industrial and Engineering Chemistry. H. F. Howe, 810 Eighteenth St., N. W., Washington, D. C.
Mon. Papeterie Française	Le Moniteur de la Papeterie Française 154 Boulevard Haussmann, Paris, France.
Papier.....	Le Papier. 16 Rue du Rocher, Paris (8 ^e), France.
Papeterie.....	La Papeterie. 9 Rue Lagrange, Paris (5 ^e), France.
Paper.....	Paper. 251 West Nineteenth St., N. Y. City.
Paper Ind.....	The Paper Industry. 356 Monadnock Block, Chicago, Ill.
Paper Trade J.....	Paper Trade Journal. 10 East Thirty-Ninth St., New York City.

Papierfabr.....Der Papier-Fabrikant. Otto Eisner, Oranienstr. 140-142, Berlin, S. 42, Germany.
Pulp and Paper.....Pulp and Paper Magazine of Canada. Gardenvale, Que.
Wochbl. Papierfabr.....Wochenblatt für Papierfabrikation. Güntler-Stein in Biberach a. d. Riss, Württemberg, Germany.

TRIMBEY AND TIBBITS SYSTEM

(Continued from page 60)

trol and with a graduated dial and tripping device. With the supply controlled by a consistency regulator each revolution of the meter gives a known amount of stock and the number of revolutions necessary per beater is computed from the furnish formula. The attendant sets the dial to this number, opens the valve and presses the "start" button and is then free to go about his other duties; as the meter revolves the dial returns and when the proper number of revolutions has occurred the tripping device registers on the "stop" button and the motor is shut off. The dial and tripping device can be placed where they will be conveniently located for the attendant while the meter can be located some distance above the floor and supply two or more beaters.

By the use of this meter and consistency regulators soft stock to beaters can be controlled as accurately as though the furnish were in laps, and where all soft stock is used and a heating or brushing

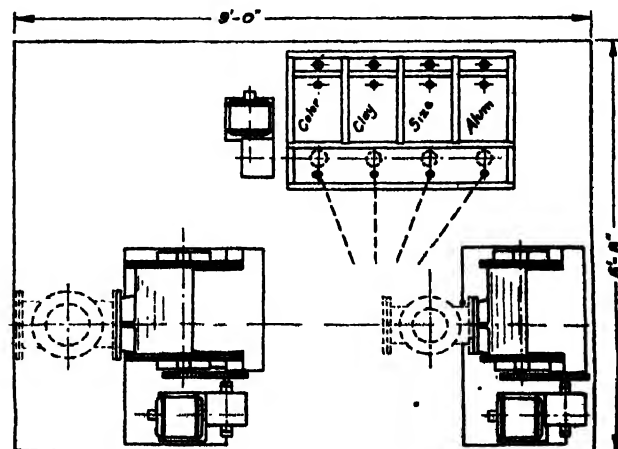
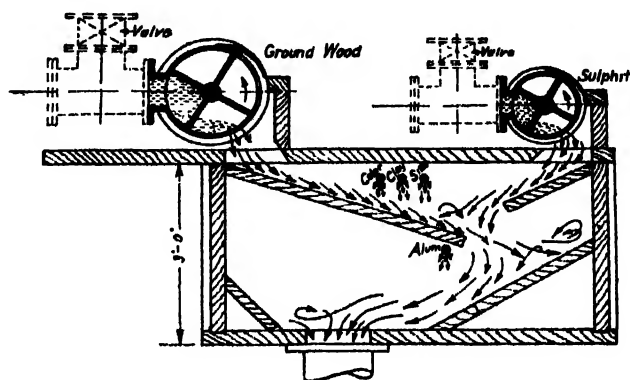


FIG. 3

action is not essential, as in the manufacture of news print, the advantages of this proportioning and metering system over intermittent mixing tanks or beaters are,—savings in floor space, power, labor and maintenance, together with exact proportions, uniform consistency and a record of the amounts of each kind of stock used.

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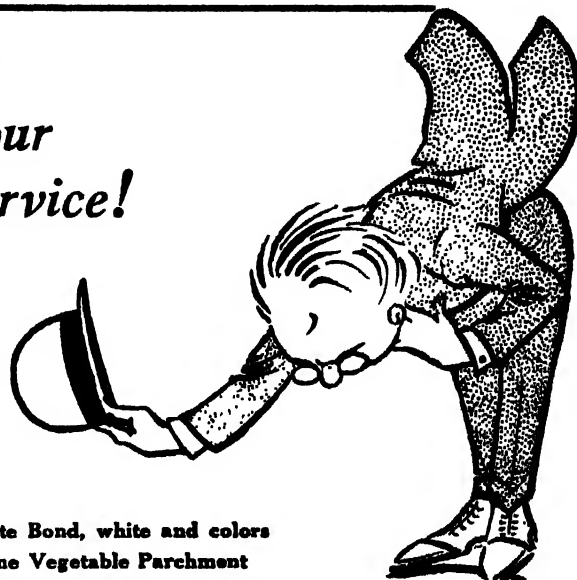
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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, SEPTEMBER 27, 1922.

At the meeting of the newspaper publishers of New York last week, the assemblage failed to come to any conclusion regarding the recommendation of the A. N. P. A. that a 10 per cent reduction in the use of news print paper be put into effect. After a fruitless discussion as to whether the cut should be made in the advertising columns or in the volume of news matter, it was decided to take no action whatever as a group, leaving the solution of the matter to each individual publisher. As a result of this failure to agree, news print consumption will, undoubtedly, continue at the rapid clip it has been maintaining in recent months. Besides the fact that there are 338 new advertisers in the newspapers of the A. N. P. A. this year, special editions and feature pages are swelling the normal sizes of newspapers the country over. And then, new papers are coming into existence from time to time, as is witnessed by the establishment of the *Syracuse Telegram*, a Hearst publication, Monday of this week.

The demand for nearly all grades of paper during the past week has been exceptionally strong—in many cases exceeding the supplies available. As a result most of the paper markets have continued firm and the price tone has stiffened up proportionally. Pulp is moving into the limelight with substantial price increases, paper stock braced up considerably after slumping off the week before, and tissue supplies were as scarce as ever. From all indications the balance of the fall and winter should bring an unprecedented period of substantial business to nearly every branch of the industry.

News print consumption still appears to be on the increase and although the *Fourth Estate* reassures publishers that there is no occasion for alarm or a runaway market owing to the fact that there is nothing to indicate a shortage of news print for the balance of this year or for the year 1923, the latter are, in the main, inclined to play safe by covering at least the remainder of their 1922 requirements at prices which are still under four cents a pound. It has been freely predicted in news print circles that the last quarter would usher in a price of four cents for standard roll news in car lots.

Tentative book paper prices have been announced by some of the manufacturers, but the majority are still withholding their new schedule of prices until the ultimate outcome of the strike situation may be determined. Meanwhile, the demand for all grades of book is increasing tremendously. Dealers believe that the present month will turn out to be the record breaking month of the past two years or more in point of book paper consumption.

The same situation with regard to prices obtains in the fine paper market as in that of book paper. The business outlook in the fine paper trade looks more promising each week. The export business has picked up to an appreciable extent recently, but mills are finding a ready outlet for their product in the dealers of this country, whose stocks are still too low properly to cope with the volume of fall trade.

The harvest season for tissue men has just started, and dealers are now handicapped only by their inability to get sufficient supplies from the mills. Ream quotations are stiffening up for from two to four cents each week that goes by under cover of the general price withdrawal which still is in effect. The fall clothing trade is clamoring for tissue, and mills are grinding out the commodity and shipping it as well as their crippled facilities will permit.

Corresponding with the increase in the prices of kraft pulp, and other grades used extensively in the manufacture of wrapping paper, the cost of the finished product is expected to reflect this advance within a week or ten days. Wrapping paper mills are once more able to get enough coal to continue operations, but they are forced to pay ridiculously high prices for it.

Board manufacturers are flooded with so many orders that, as one dealer phrased it, "if they keep coming in they'll have to

enlarge their filing systems to hold them all." The fact that quotations have been resumed in this market, even upon a nominal basis, may be taken as an indication that conditions are steadying up. Mills have enough orders on hand now to keep them running full blast for at least the remainder of the present year, and it looks as though the demand had come to stay.

Mechanical Pulp.

Brisk business has characterized the ground wood market of the past week, news print mills in particular buying and using large quantities of mechanical pulp. Board mills are running a close second in the consumption of ground wood pulp, and the price level of \$30 to \$31 per ton f. o. b. producer's plant has continued to rule. The general undertone of the market is firming up and grinders anticipate a higher scale of prices for the last two months of this year. The New York price of Canadian ground wood, prime spruce fiber, has ranged from \$33 to \$34 via water shipment. The commodity is growing increasingly scarce despite the favorable conditions which prevailed throughout the "dry" season, and several New York dealers were reported to have turned down orders for immediate shipment owing to the fact that sufficient supplies of ground wood were unavailable.

Chemical Pulp

The greatly increased consumption of chemical pulp within the past few weeks has begun to make dents in the large reserve stocks of nearly every grade of pulp that accumulated during the comparatively quiet season preceding. Prices are firming almost daily and the price of 4.25 cents a pound, f. o. b. producer, is being asked and received for both No. 1 imported and domestic bleached sulphite. While domestic kraft pulp is now being listed at 2.65 to 3.00 cents a pound, f. o. b. mill, the imported kraft is holding in the neighborhood of \$52 and \$53 per ton.

Old Rope and Bagging

Although real buying activity has not yet arrived in the old rope market, the situation has taken a promising turn in the last few weeks in that inquiries are much more plentiful and the general undertone of the market has been strong. Dry old domestic Manila rope has sold for as high as 6.25 cents a pound, and this has been given the preference over foreign grades. Mixed strings are maintaining an even price tone and are in regular demand.

Bagging, especially roofing bagging, has continued in good demand, being, in fact, the highlight of the entire market. Both fine paper and tissue manufacturers are expected to require increasingly larger quantities of scrap, which has been quoted at prices ranging from 1.05 cents a pound to 1.15. Prices are expected to harden appreciably when this consumption actually materializes.

Waste Paper

The temporary easing up which occurred in the waste paper market last week proved to be of a transitory nature when mills re-entered the market for paper stock paying prices equivalent to those which ruled during the preceding week. Manufacturers are expected to broaden the scale of their buying in keeping with the pronounced expansion of their business, and prices even higher than those which prevailed several weeks ago are promised for the near future.

Rags

A substantial volume of business has been accruing to cotton rag merchants, the purchases of roofing felt manufacturers greatly augmenting the extent of sales. Whites have been moving along to consumers in goodly quantities and blues have been holding their own at 1.60 cents a pound in carload lots or from 1.75 to 1.90 repacked. Prices have ruled firm on specialty grades of rags and the demand continues to be active.

Twine

When the supplies of twine that are now clotting the market, manufactured from raw materials bought at the old scale of prices, are finally used up, dealers look for a substantial boost in prices of the finished product. This is expected to come any week.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations September 26, 1922:

	BID	ASKED
American Writing Paper Company, pref.	33 3/4	34
International Paper Company, com.	56 3/4	57
International Paper Company, pref., stamped.	78	79 1/4
Union Bag & Paper Corporation.	73 3/4	74 1/2

Paper

F. o. b. Mill.

Ledgers		
Bonds		
Writings—		
Extra Superfine.	All	
Superfine	quotations	
Tub Sized	withdrawn	
Engine Sized		
News—f. o. b. Mill—		
Rolls, contract.	3.75	@ 4.00
Rolls, transit.	4.00	@ —
Sheets	4.00	@ —
Side Runs	3.25	@ 3.50

Book, Cased—f. o. b. Mill		
S. & S. C.		
M. F.	All	
Coated and En-	quotations	
amel	withdrawn	
Lithograph		
Tissues—f. o. b. Mill		
White, No. 1.	All	
Colored	quotations	
Anti-Tarnish	withdrawn	
Silver Tissue		
Manila		

Kraft—f. o. b. Mill—		
No. 1 Domestic.	7.00	@ 7.50
No. 2 Domestic.	5.50	@ 6.25
Imported	6.00	@ 6.25
Screenings	3.00	@ 3.50
Manila—		
No. 1 Jute.	8.50	@ 9.00
No. 2 Jute.	7.75	@ 8.50
No. 1 Wood.	4.50	@ 5.50
No. 2 Wood.	4.00	@ 4.50
Butchers	4.25	@ 4.75

Fiber Papers—		
No. 1 Fiber.	6.00	@ 6.25
No. 2 Fiber.	5.00	@ 5.25
Common Bogus.	2.50	@ —
Card Middies.	4.00	@ 5.00

Boards—per ton—		
News	65.00	@ —
Straw	60.00	@ —
Chip	60.00	@ —
Binders' Board.	75.00	@ —
Spl. Mia. L. Chip.	70.00	@ —
Wood Pulp	—	@ —
Container	—	@ —

Wax Paper—		
Self Sealing White		
28 and 30 lb.		
basis	10.50	@ 12.00
Waxed Tissue.	1.60	@ 1.80

Glassine—		
Bleached, basis 25	All	
lbs.	quotations	
Bleached, basis 20	withdrawn	
lbs.		

Mechanical Pulp

(Ex-Dock)

No. 1 Imported.	32.00	@ 36.00
No. 1 Domestic.	28.00	@ 32.00
(F. o. b. Pulp Mills.)		

Chemical Pulp

(Ex-Dock, Atlantic Ports.)

Sulphite (Imported)—		
Bleached	4.30	@ 4.50
Easy Bleaching.	2.85	@ 3.10
No. 1 strong un-		
bleached	2.50	@ 2.75
No. 2 Strong un-		
bleached	2.25	@ 2.50
No. 1 Kraft.	2.70	@ 3.00
Sulphate—		
Bleached	3.90	@ 4.00
(F. o. b. Pulp Mills.)		
Sulphite (Domestic)—		
Bleached	4.25	@ 4.50
Strong unbleached.	2.60	@ 2.80
Easy Bleaching		
Sulphite	2.70	@ 3.10
News Sulphite.	2.50	@ 2.80
Witchcraft.	2.75	@ 3.05
Kraft (Domestic)	2.65	@ 3.00
Soda Bleached.	4.00	@ 4.50

Domestic Rags

New

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1.	11.25	@ 11.75
New White, No. 2.	6.50	@ 7.00
Silicas, No. 1.	6.25	@ 6.75
New Unbleached.	9.00	@ 9.50
Washables	4.00	@ 4.25
Fancy	5.00	@ 5.50
Cotton—according		
to Grades—		
Blue Overall.	5.50	@ 6.00
New Blue	4.75	@ 5.00
New Black Soft.	5.50	@ 6.00
New Light Sec-		
onds	2.75	@ 3.00
O. D. Khaki Cut-		
tings	3.75	@ 4.25
Men's Corduroy.	2.75	@ 3.00
New Canvas	7.00	@ 7.25
New Black Mixed	2.50	@ 2.75

White, No. 1—		
Repacked	6.50	@ 6.75
Miscellaneous	5.50	@ 6.00
White, No. 2—		
Repacked	3.25	@ 3.50
Miscellaneous	2.75	@ 3.00
St. Soiled White.	1.65	@ 1.75
Thirds and Blues—		
Repacked	1.75	@ 1.85
Miscellaneous	1.45	@ 1.55
Black stockings	2.90	@ 3.25
Roofing Rags—		
Cloth Strippings.	1.25	@ 1.35
No. 1	1.25	@ 1.35
No. 2	1.20	@ 1.25
No. 3 .....	.85	@ .95
No. 4 .....	.85	@ .95
No. 5A	1.00	@ 1.10

Foreign Rags

New Light Silicas.	6.00	nominal
Light Flannelettes.	6.75	nominal
Unbleached Cottons.	7.50	nominal
New White Cut-		
tings	9.50	nominal
New Light Oxfords.	6.00	nominal
New Light Prints.	4.50	nominal
New Mixed Cut-		
tings	2.00	@ 2.50
New Dark Cuttings.	1.90	@ 2.10
No. 1 White Linens.	9.00	@ 11.00
No. 2 White Linens.	6.50	nominal
No. 3 White Linens.	5.00	nominal
No. 4 White Linens.	3.50	nominal
Old Extra Light		
Prints	2.00	nominal
Ord. Light Prints.	1.75	nominal
Med. Light Prints.	1.50	nominal
Dutch Blue Cottons.	1.85	nominal
German Blue Cot-		
tons	1.50	nominal
Ger. Blue Linens.	3.50	nominal
Checks and Blues.	1.30	nominal
Dark Cottons.	1.20	@ 1.30
Shoppers	1.00	@ 1.05
French Blues.	1.75	@ 2.00

Bagging

Prices to Mill f. o. b. N. Y.

Gunny No. 1—		
Foreign	1.00	@ 1.10
Domestic	1.00	@ 1.10
Wool, Tares, light.	1.45	@ 1.55
Bright Bagging.	1.10	@ 1.25
No. 1 Scrap.	1.00	@ 1.15
Second Bagging.	.85	@ .95
Manila Rope—		
Foreign	6.00	@ 6.25
Domestic	6.25	@ 6.50
New Bu. Cut.	2.25	@ 2.45
Hessian Jute Threads.		
Foreign	2.25	@ 2.50
Domestic	2.20	@ 2.40
Mixed Strings.	.90	@ 1.00

Twines

Cotton—(F. o. b. Mill)		
No. 1.	.45	@ .47
No. 2.	.31	@ .33
No. 3.	.37	@ .39

India, No. 6 basis—

Light .....	.20	@ .21
Dark .....	.19	@ .20
B. C., 18 Basis.	.41	@ .42
A. B. Italian, 18		
Basis .....	.51	@ .61
Finished Jute—		
Light, 18 basis.	.26	@ .27
Dark, 18 basis.	.29	@ .30
Jute Wrapping, 3-6		
Ply—		
No. 1.	.23	@ .24
No. 2.	.21	@ .22
Tube Rope—		
4-ply and larger.	.15	@ .17
Fine Tube Yarn—		
5-ply and larger.	.19	@ .21
4-ply .....	.20	@ .22
3-ply .....	.20	@ .22
Unfinished India—		
Basis .....	.16	@ .17
Paper Makers Twine		
Balls .....	.13	@ .15
Box Twine, 2-3 ply	.18	@ .19
Jute Rope .....	.21	@ .24
Amer. Hemp, 6.	.33	@ .35
Sisal Hay Rope—		
No. 1 Basis.	.15	@ .17
No. 2 Basis.	.13	@ .15
Sisal Lath Yarn—		
No. 1.	.14	@ .15
No. 2.	.11	@ .13
Manila Rope.	.18	@ .19

Old Waste Papers

(F. o. b. New York)

Shavings—		
Hard, White, No. 1	4.00	@ 4.25
Hard, White, No. 2	3.65	@ 3.90
Soft, White No. 1	3.60	@ 3.80
Flat Stock—		
Stitchless	2.15	@ 2.30
Over Issue Mag.	2.60	@ 2.70
Solid Flat Book.	2.10	@ 2.25
Crumpled No. 1.	1.70	@ 2.00
Solid Book Ledger.	3.00	@ 3.25
Ledger Stock.	2.25	@ 2.50
New B. B. Chips.	.65	@ .70
Manillas—		
New Env. Cut.	2.50	@ 2.75
New Cut No. 1.	2.00	@ 2.10
Extra No. 1, Old.	1.55	@ 1.65
Print	1.10	@ 1.20
Container Board.	1.00	@ 1.10
Bogus Wrapper.	1.05	@ 1.15
Old Krafts, machine		
compressed		
Bales	2.00	@ 2.15
News—		
No. 1 White News	1.80	@ 1.95
Strictly Overissue	1.20	@ 1.30
Strictly Folded.	1.10	@ 1.15
No. 1 Mixed Paper	.90	@ .95
Common Paper.	.60	@ .65

CHICAGO

(FROM OUR REGULAR CORRESPONDENT)

Paper

F. o. b. Mill

All Rag Bond.		
No. 1 Rag Bond.		
No. 2 Rag Bond.		
Water Marked Sul-		
phite Bond.		
Sulphite Ledger.		
Superfine Writing.		
No. 1 Fine Writing		
No. 2 Fine Writing		
No. 3 Fine Writing		
No. 1 M. F. Book		
No. 1 S. & S. C.		
Book		
Coated Book.		
Coated Label.		
News—Kolla, mill	3 3/4 @	4 1/2
News Sheets, mill.	3 3/4 @	4 1/4
No. 1 Manila.	5 1/2 @	6
No. 1 Fiber.	5 @	5 1/2
No. 2 Manila.	4 1/2 @	5
Butchers' Manila.	4 @	—
No. 1 Kraft.	7 @	7 1/2
No. 2 Kraft	6 @	6 1/2
Wood Tag Boards.	4 @	—
Screenings	2 1/2 @	—
Boards, per ton—		
Plain Chip.		
Solid News.		
Manila Lined		
Chip		
Container Line—		
85 Test		
100 Test		

Old Papers

Shavings—		
No. 1 Hard White	4.50	@ 4.75
No. 1 Soft Shav.	3.75	@ 4.00
No. 1 Mixed.	2.10	@ 2.30
No. 2 Mixed.	1.75	@ 1.90
White Envel. Cut-		
tings	4.50	@ 4.75
Ledgers and Writ-		
ings	2.65	@ 2.75
Solid Books	2.55	@ 2.65
No. 1 Books, light.	2.40	@ 2.50
Blanks	2.00	@ 2.25
Ex. No. 1 Manila.	2.40	@ 2.60
Manila Envelope		
Cuttings	2.40	@ 2.60
No. 1 Manillas.	1.75	@ 2.00
Folders News (over		
issue)	1.40	@ 1.50
Old Newspaper.	1.35	@ 1.45
Mixed Papers.	1.25	@ 1.50
Straw Clippings.	1.25	@ 1.50
Binders Clippings.	1.25	@ 1.50
Kraft	2.40	@ 2.60
New Kraft Cuts.	2.50	@ 2.75
Roofing Stock, f. o. b.		
Chicago, Net Cash—		
No. 1	33.00	@ —
No. 2	31.00	@ —
No. 3	29.00	@ —
No. 4	29.00	@ —

PHILADELPHIA

(FROM OUR REGULAR CORRESPONDENT)

Paper

Bonds .....	.10	@ .60
Ledgers .....	.15	@ .40
Writings—		
Superfine .....	.15	@ .20
Extra fine.	.12	@ .22
Fine .....	.20	@ .30
Fine, No. 2.	.20	@ .25
Fine, No. 3.	.15	@ .20
Book, M. F.	.06	@ .09
Book, S. S. & C.	.08	@ .15
Book, Coated.	.08	@ .15
Coated Lithograph	.10	@ .15
Label .....	.08	@ .15
News .....	.05	@ .07
No. 1 Jute Manila.	.12	@ .13
Manila Sul., No. 1.	.08	@ .08 1/2
Manila No. 2.	.07 1/2	@ .08
No. 2 Kraft.	—	@ .08 1/2
No. 1 Kraft.	—	@ .09 1/2
Common Bogus.	.02 1/2	@ .03
Straw Board.	.67.50	@ 70.00
News Board.	.58.00	@ —
Chip Board.	.58.00	@ —
Wood Pulp Board.	1.20	@ 1.25
(Carload Lots)		
Binder Boards—		
Per ton.	80.00	@ —
Carload lots.	80.00	@ —
Tarred Felts—		
Regular	48.00	@ 50.00
Slaters	54.00	@ 56.00

Best Tarred, 1-ply		
(per roll)	1.35	@ 1.50
Best Tarred, 2-ply		
(per roll)	1.00	@ 1.15
Best Tarred, 3-ply	1.50	@ 1.65

Bagging

F. o. b. Phila.

Gunny No. 1—		
Foreign	1.10	@ —
Domestic	1.10	@ —
Manila Rope.	5.25	@ 5.75
Sisal Rope.	.75	@ .80
Mixed Rope.	.75	@ .80
Scrap Burlap.	1.00	@ 1.25
Wool Tares, heavy.	2.50	@ 2.75
Mixed Strings.	.75	@ .80
No. 1, New Lt. Bur-		
lap	1.75	@ 2.00
New Burlap Cut-		
tings	1.75	@ 2.10

Old Papers

F. o. b. Phila.

Shavings—

Imports and Exports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

SUMMARY

News print 416 rolls, 321 bls.
Printing paper 437 bls., 55 rolls
Photo paper 18 cs.
Surface coated paper 178 cs.
Writing paper 17 cs.
Wall paper 4 cs., 5 bls.
Wrapping paper 28 rolls, 19 cs., 214 bls.
Cigarette paper 275 cs.
Miscellaneous paper 6,039 rolls, 117 cs., 718 bls.

CIGARETTE PAPER

P. J. Schweitzer, Fenchurch, Marseilles, 75 cs.
P. J. Schweitzer, Roma, Marseilles, 80 cs.
Rose & Frank, Olympic, Southampton, 50 cs.
British-American Tobacco Co., Scythia, Liverpool, 9 cs.
British-American Tobacco Co., Fort Hacking, Liverpool, 26 cs.
British-American Tobacco Co., Baltic, Liverpool, 18 cs.
The Sturbrug Co., La Bourdonnais, Havre, 17 cs.

WRAPPING PAPER

Wilkinson Bros. & Co., Inc., Pipestone County, Rotterdam, 28 rolls
C. Steiner, President Fillmore, Bremen, 19 cs.
Wilkinson Bros. & Co., Inc., Trondhjemstfjord, Bergen, 214 bls.

WALL PAPER

W. H. S. Lloyd & Co., Vennonia, London, 5 bls.
A. L. Diamant, Lapland, Antwerp, 1 cs.
A. Murphy & Co., by same, 3 cs.

WRITING PAPER

F. Dietzgen & Co., Fenchurch, Marseilles, 8 cs.
F. Dietzgen & Co., Roma, Marseilles, 19 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Tapland, Antwerp, 138 cs.
Defender Photo Supply Co., by same, 40 cs.

PHOTO PAPER

Gevaert Co. of America, Tapland, Antwerp, 18 cs.

NEWS PRINT

Hudson Trading Co., Minnekahda, Hamburg, 105 rolls
Vernon Bros. & Co., Fort Hacking, Liverpool, 17 bls.
Virginia Paper Co., Inc., Natirar, Helsingfors, 304 bls.
Box Board Lining Co., by same, 119 rolls
New York Tribune, by same, 192 rolls.

PRINTING PAPER

Paper House of Pennsylvania, Natirar, Helsingfors, 105 rolls
H. Reeve Angel & Co., by same, 55 rolls
Hans Weinkrantz & Co., Inc., by same, 37 bls.
J. B. Harris Co., Inc., by same, 23 bls.
Paul F. Vernon & Co., by same, 114 bls.
Irving National Bank, by same, 157 bls.

PAPER

Republic Bag & Paper Co., Dryden, Hamburg, 1,105 rolls.
Hensel, Bruckman & Larbache, Mt. Clay, Hamburg, 8 cs.
W. P. Ethrington & Son, Algeria, Glasgow, 67 cs.
H. Reeve Angel & Co., Inc., Olympic, Southampton, 7 cs.
Parsons & Whittemore, Scyditz, Bremen, 148 bls.
Parsons & Whittemore, by same, 1,986 rolls
Republic Bag & Paper Co., by same, 193 rolls.
National Bank of Commerce, by same, 346 rolls.
Virginia Paper Co., Inc., by same, 170 bls.
Bulkeley, Dunton & Co., by same, 21 bls.
Bulkeley, Dunton & Co., by same, 32 rolls.
M. O'Meara Co., by same, 135 bls.
Chemical National Bank, by same, 88 rolls.
New York Tribune, by same, 138 rolls.
Rose & Frank, France, Havre, 25 cs.
M. G. Lange Co., President Fillmore, Bremen, 10 cs.

H. Reeve Angel & Co., Inc., by same, 7 bls.
H. Reeve Angel & Co., by same, 217 rolls.
C. H. Young Publishing Co., by same, 341 rolls.
Bulkeley, Dunton & Co., by same, 72 rolls.
J. B. Harris & Co., Inc., by same, 148 rolls.
C. C. Melby, Natirar, Gothenburg, 54 bls.
Becker Paper Corp., by same, 165 bls.
Wilkinson Bros. & Co., Inc., by same, 8 bls.
Wilkinson Bros. & Co., by same, 465 rolls.
Republic Bag & Paper Co., by same, 907 rolls.

RAGS, BAGGINGS, ETC

Katzenstein & Keene, Inc., Dryden, Hamburg, 260 bls., rags.
American Exchange National Bank, by same, 257 bls., rags.
Chase National Bank, by same, 12 bls., rags.
Chase National Bank, Mt. Clay, Hamburg, 216 bls., rags.
Katzenstein & Keene, Inc., Algeria, Glasgow, 186 bls., rags.
American Wood Pulp Corp., Pipestone Co., Rotterdam, 152 bls., rags.
Seaboard National Bank, Fenchurch, Marseilles, 44 bls., paper stock.
Brown Bros. & Co., Alpine Range, Middlesbrough, 529 bls., rags.
Ladenburg, Thalman & Co., West Inskip, Antwerp, 50 bls., rags.
American Wood Pulp Corp., by same, 595 bls., rags.
E. Butterworth & Co., by same, 101 bls., bagging.
J. B. Moors & Co., Scythia, Liverpool, 55 bags hide cuttings.
Equitable Trust Co., Port Hacking, Liverpool, 72 bls., waste paper.
Royal Manufacturing Co., by same, 17 bls., cotton waste.
Katzenstein & Keene, Vennonia, London, 55 bls., new cuttings.
Katzenstein & Keene, Stannore, Dundee, 149 bls., rags.
Katzenstein & Keene, Vennonia, London, 136 bls., rags.
Castle, Gottheil & Overton, Roussillon, Rouen, 37 bls., bagging.

OLD ROPE

Brown Bros. & Co., Pipestone Co., Rotterdam, 52 coils.
W. Schall & Co., Fenchurch, Barcelona, 53 coils.
Brown Bros. & Co., Rotterdam, Rotterdam, 110 coils.
E. J. Keller Co., Inc., Noncet, Havre, 67 bls., rags.
E. J. Keller Co., Inc., Dryden, Hamburg, 194 bls., rags.
E. J. Keller Co., Inc., Lapland, Antwerp, 221 bls., flax waste.
E. J. Keller Co., Inc., La Bourdonnais, Marseilles, 354 bls., rags.
E. J. Keller Co., Inc., Breiz Izel, Havre, 170 bls., rags.
Salomon Bros. & Co., Kionland, Antwerp, 162 bls., flax waste.
Salomon Bros. & Co., Storm King, Hamburg, 138 bls., rags.
Salomon Bros. & Co., Iaconia, Leith, 48 bls., rags.

WOOD PULP

M. Gottesman & Co., Inc., Stavangerfjord, Christiania, 500 bls.
Hudson Trading Co., Winnebago, Gothenburg, 1,200 bls.
Brown Bros. & Co., Dryden, Hamburg, 495 bls., 75 tons.
M. Gottesman & Co., Inc., by same, 687 bls., 103 tons.
American Wood Pulp Corp., Alstern, Gothenburg, 250 bls.
Brown Bros. & Co., by same, 4,000 bls.
A. J. Pagel & Co., Inc., by same, 4200 bls.
Tidewater Paper Mills Co., O. C. Curtis, Gaspe, 7,518 bls., 1,503 tons.
Tidewater Paper Mills Co., by same, 5,054 bls., 1,010 tons.
Bulkeley, Dunton & Co., Malmes, Gefle, 1,500 bls., 304 tons.
A. J. Pagel & Co., Inc., Malmes, Domsjo, 4,890 bales, 815 tons.
A. J. Pagel & Co., Inc., Malmes, Husum, 3,000 bales, 500 tons.
A. J. Pagel & Co., Inc., Malmes, Hornefors, 3,120 bales, 520 tons.
J. Andersen & Co., Natirar, Gothenburg, 250 bales, 50 tons.
Johannson, Wales & Sparre, Natirar, Harnosands, 7,200 bales, 1,219 tons.
Guaranty Trust Co., Natirar, Sikea, 1,200 bales, 203 tons.

BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Bulkeley, Dunton & Co., Malmes, Gefle, 5,250 bls., 1,066 tons wood pulp.
A. J. Pagel & Co., Inc., Malmes, Domsjo, 3,300 bls., 550 tons wood pulp.
A. J. Pagel & Co., Inc., Malmes, Husum, 1,500 bls., 250 tons wood pulp.

A. J. Pagel & Co., Inc., Malmes, Obbaola, 2,800 bls., 406 tons wood pulp.
A. J. Pagel & Co., Inc., Malmes, Hornefors, 1,440 bls., 240 tons wood pulp.
Scandinavian-American Trade Co., Natirar, Gothenburg, 2,362 bls., 354 tons wood pulp.
Johannson, Wales & Sparre, by same, 4,485 bls., 905 tons wood pulp.
Hudson Trading Co., Winnebago, Gothenburg, 3,000 bls., wood pulp.
R. F. Hammond, Naruega, Gothenburg, 2,500 bls., 500 tons wood pulp.
M. Gottesman & Co., Inc., Nevada, Stockholm, 33 reels news print.
Salomon Bros. & Co., Blydendyk, Rotterdam, 148 coils old rope.
Katzenstein & Keene, Inc., Quaker City, London, 129 bales rags.
E. J. Keller Co., Inc., Glenridge, Frankfurt, 414 bales rags.
E. J. Keller Co., Inc., L. P. Homblar, Copenhagen, 739 bales rags.
Castle, Gottheil & Overton, Burgerdyk, Rotterdam, 368 bales rags.
Castle, Gottheil & Overton, Glenridge, Antwerp, 80 bales rags.
Castle, Gottheil & Overton, Breiz Izel, Rouen, 839 bales rags.

PORTLAND (MAINE) IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Scandinavian American Trading Co., Natirar, Harnosands, 8,400 bls., 1,422 tons wood pulp.

NEW ORLEANS IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Castle, Gottheil & Overton, Kentucky, Havre, 432 bls., rags.
Katzenstein & Keene, Inc., City of Weatherford, London, 131 bls., rags.

PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Hudson Trading Co., Steigerwald, Hamburg, 179 rolls news print.
Salomon Bros. & Co., Morristown, Hamburg, 210 bls., rags.
Salomon Bros. & Co., Western Scout, Hamburg, 62 bls., rags.
Salomon Bros. & Co., City of Flint, Hamburg, 633 bls., rags.
Salomon Bros. & Co., Hudson, Antwerp, 104 bls., rags.
Salomon Bros. & Co., Sahale, Leith, 370 bls., rags.
Salomon Bros. & Co., Chickasaw, Hamburg, 432 bls., rags.
Katzenstein & Keene, Inc., West Inskip, Antwerp, 36 bls., rags.
Katzenstein & Keene, Inc., Breiz Izel, Havre, 427 bls., rags.
E. J. Keller Co., Inc., Silene, Marseilles, 830 bls., rags.
E. J. Keller Co., Inc., L. P. Holmlar, Copenhagen, 455 bls., rags.
E. J. Keller Co., Inc., Breiz Izel, Rouen, 525 bls., rags.
E. J. Keller Co., Inc., Breiz Izel, Havre, 275 bls., rags.
E. J. Keller Co., Inc., Edgehill, Frankfurt, 184 bls., rags.
E. J. Keller Co., Inc., Burgerdyk, Rotterdam, 79 bls., rags.
E. J. Keller Co., Inc., West Inskip, Antwerp, 359 bls., rags.
Castle, Gottheil & Overton, Burgerdyk, Amsterdam, 262 bls., rags.
Castle, Gottheil & Overton, Michigan, Antwerp, 658 bls., rags.
Castle, Gottheil & Overton, Breiz Izel, Rouen, 1,492 bls., rags.
Castle, Gottheil & Overton, by same, 265 bls., bagging.

BOSTON IMPORTS

WEEK ENDING SEPTEMBER 23, 1922

Salomon Bros. & Co., Chappaqua, Antwerp, 466 bls., flax waste.
Kalbfleisch Corp., Sogdal, Buenos Aires, 834 bales caseln.

The **B** *Quality: It means more than price*
INC PULPS

"Hafslund Bear" "Forshaga"
 BLEACHED SULPHITE
"Klarafors"
 EASY BLEACHING SULPHITE
STRONG UNBLEACHED SULPHITE
"Hurum" "Bamle"
 EXTRA STRONG KRAFT; BLEACHED AND
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Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
WEDNESDAY, SEPTEMBER 27, 1922.

ALUM.—The demand for ammonia alum continues on the increase with the advent of brisk fall business. Price quotations are steady to firm, the current listings being \$3.50 to \$3.75 a hundred for powdered alum and \$3.40 to \$3.60 for ground.

BLEACHING POWDER.—Large drum quantities of bleach are becoming more and more scarce each week, but the price is holding in the neighborhood of \$1.70 per cwt. with a tendency toward stiffening. Producers are still encountering serious fuel difficulties.

BLANC FIXE.—Registering a fair amount of activity, supplies of blanc fixe are steadily moving to consumers at the quoted prices of \$70 to \$80 per ton on dry blanc fixe and \$40 to \$50 on the blanc fixe pulp.

CAUSTIC SODA.—Shipping from caustic plants is in sporadic and uncertain quantities due to the difficulties which producers have had to surmount in the matters of securing adequate coal supplies and transportation facilities. Caustic soda is now quoted around 2.70 cents a pound, works, for the 60 per cent basis grade.

CHINA CLAY.—New York importers assert that the china clay market is now stronger than it has been in several years. Dealers are catering to an excellent demand and large imports of the English product have either already arrived in this country or are on the way here. It is believed that the present heavy requirement of consumers will lead to prices higher than the quoted \$15 to \$22 per ton on imported clay, \$8 to \$11 on domestic washed and \$6 to \$8.50 on domestic unwashed.

CASEIN.—With the falling off of domestic production of casein, combined with the announcement of the lowered import duty, it is anticipated that the next six weeks will witness a considerable relaxation in the price tension of the casein market. Argentine casein is now being sold for 1923 delivery at prices ranging from four to six cents a pound lower than the rates which were prevailing a month ago. The price of 15 to 19 cents a pound now obtains.

LIQUID CHLORINE.—The demand for liquid chlorine, both in 100-lb. cylinders and in tank cars is improving considerably. Reserve supplies of the chemical are going into consumption and the quoted price of 4.00 to 7.00 cents a pound exhibits a tendency to harden.

ROSIN.—Rosin is still quoted at \$6.25 per barrel for grades E, F and G, f.o.b. New York, the demand being consistently regular.

SALTCAKE.—Dealers state that it is almost impossible to obtain any given quantity of saltcake under present conditions. All consumers are entering the market at once causing a sharp incline in the price tone. Saltcake is quoted at an average of \$22 per ton, works, while acid cake has remained up around the \$25 and \$26 mark.

SATIN WHITE.—As with blanc fixe, supplies of this whitening agent are registering increased activity, giving the market price of 1.50 to 2.00 cents a pound a steady-to-firm aspect.

SODA ASH.—The soda ash demand has increased in proportion to that for other chemicals with the coming of fall business. The commodity is listed at 1.5¢ cents a pound, the schedule price, with bag lots being quoted at 1.30 cents and bulk at 1.20.

SULPHUR.—Texas and Louisiana sulphur shipments are picking up slightly in response to the increased demands of paper manufacturers. Brimstone prices are very firm at \$18 to \$20 per ton.

STARCH.—The larger starch producers predict that prices on all grades of starch will slack up somewhat due to the 1922 bumper corn crop. Powdered starch is quoted at approximately 2.47 cents a pound in bag lots and 2.75 in barrels while papermakers' starch is listed at 2.57 and 2.85 for these amounts.

Market Quotations

(Continued from page 67)

Solid Ledger Stock. 2.25 @ 2.50	New Black Soft. .06 1/4 @ .06 1/4
Writing Paper.... 2.00 @ 2.25	New Light Sec- .02 1/4 @ .02 1/4
No. 1 Books, heavy. 2.25 @ 2.50	onds ..... .03 1/4 @ .03 1/4
No. 2 Books, light. 1.40 @ 1.50	Khaki Cuttings.. .03 1/4 @ .04 1/4
No. 1 New Manila. 2.75 @ 3.00	Corduroy ..... .03 1/4 @ .03 1/4
No. 1 Old Manila.. 1.50 @ 1.75	New Canvas.... .07 1/4 @ .08
Container Manila.. 1.35 @ 1.40	New Black Mixed .04 @
Old Kraft..... 2.25 @ 2.50	Old
Overissue News.. 1.50 @ 1.60	White, No. 1—
Old Newspaper.... 1.20 @ 1.25	Repacked ..... .06 @ .06 1/4
No. 1 Mixed Paper. 1.10 @ 1.15	Miscellaneous ... .04 1/4 @ .04 1/4
Common Paper .. .80 @ .90	White, No. 2—
Straw Board, Chip. .80 @ .90	Repacked ..... .03 @ .03 1/4
Binders Bd'. Chip. .80 @ .90	Miscellaneous ... .03 @ .03 1/4
Domestic Rag—New.	Thirds and Blues—
Price to Mill, f. o. b. Phila.	Repacked 200 @ 2.25
Shirt Cuttings—	Miscellaneous ... 1.85 @ 1.90
New White, No. 1. 1 1/4 @ .11 1/4	Black Stockings... 2.75 @ 3.00
New White, No. 2 .06 @	Roofing Stock—
Silicas, No. 1.... .06 1/4 @ .07	No. 1..... 1.30 @ 1.35
New unbleached.. .10 1/4 @	No. 2..... 1.20 @ 1.25
Washables ..... .03 1/4 @	No. 3..... 1.10 @ 1.15
Fancy 04 1/4 @ .05 1/4	No. 4..... 1.10 @ 1.15
Cottons according to grades—	No. 5A..... 1.05 @ 1.10
Blue Overall.... .05 1/4 @ .05 1/4	B..... nominal
New Blue..... .02 1/4 @ .02 1/4	C..... nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

Paper	Wood, Vat Lined..60.00 @ 65.00
Bonds ..... .08 1/4 @ .65	Filled News Board 52.50 @ 55.00
Ledgers ..... .08 1/4 @ .55	Solid News Board..60.00 @ 65.00
Writings ..... .09 @ .42	S. Manila Chip....62.50 @ 67.50
Superfine ..... .15 @ .24 1/2	Fat. Coated 70.00 @ 85.00
Fine ..... .15 @ .18	
Books, S. & S. C.. .08 @ .12	
Books, M. F..... .06 1/4 @ .10	
Books, coated..... .08 @ .16	
Label ..... .09 1/4 @ .13	
News, sheets..... 4.50 @ 4.75	
News, rolls..... 4.00 @ 4.25	
Manilas—	
No. 1 Manila.. \$5.50 @ 7.00	
No. 1 Fiber..... .07 1/4 @	
No. 1 Jute.....10.50 @ 12.00	
Kraft Wrapping.... .06 1/4 @ .12	
Common Bogus.... 3.00 @ 3.50	

Boards

(Per Ton Destination)	
Chip \$50.00 @ 55.00	
News, Vat Lined.. \$51.50 @ 55.00	

Old Papers

Shavings—	
No. 1 Hard White 4.00 @ 4.25	
No. 1 Soft White 3.30 @ 3.45	
No. 1 Mixed..... 1.50 @ 1.75	
Ledgers & Writings 1.75 @ 2.00	
Solid Books..... 2.00 @ 2.25	
Blanks 1.70 @ 1.80	
No. 2 Light Books. 1.50 @ 1.80	
Folded News, over issues 19.00 @ 20.00	
Gunny Bagging ... .85 @ .90	
Manila Rope..... 5.75 @ 6.00	
Common Paper.... .80 @ .90	
Old News..... .80 @ .90	
Old Kraft..... 1.75 @ 2.00	

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper	Sulphite, bleached..85.00 @ 95.00
(Mill Prices to Jobbers f. o. b. Mill)	Sulphate .....70.00 @ —
Bond —	
Sulphite ..... .11 @ .12 1/4	
Light tinted..... .12 @ .13 1/4	
Dark tinted..... .13 1/4 @ .15	
Ledgers (sulphite).. — @ .13	
Writing ..... .09 1/4 @ .12	
News, f. o. b. Mills—	
Rolls (carloads).. 3.50 @	
Sheets (carloads).. — @ 4.25	
Sheets (2 tons or over) — @ 4.50	
Book—	
No. 1 M. F. (carloads) 8.50 @ —	
No. 2 M. F. (carloads) 7.50 @ —	
No. 3 M. F. (carloads) 7.00 @ —	
No. 1 S. C. (carloads) 9.00 @ —	
No. 2 S. C. (carloads) 8.00 @ —	
No. 1 Coated and litho.....14.00 @ —	
No. 2 Coated and litho.....13.00 @ —	
No. 3 Coated and litho.....12.25 @ —	
Coated and litho, colored .....14.25 @ —	
Wrapping—	
Grey 4.50 @ —	
White Wrap 5.00 @ —	
"B" Manila 5.50 @ —	
No. 1 Manila 6.75 @ —	
Fiber 6.75 @ —	
Kraft, M. F. 8.00 @ —	
M. G. 8.15 @ —	

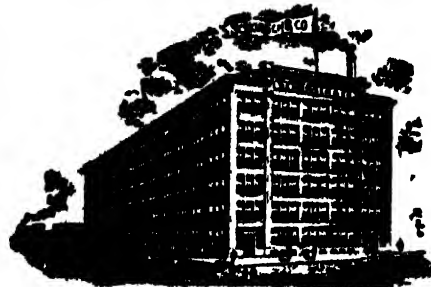
Pulp

(F. o. b. Mill)	
Ground wood..... \$25.00 @ 35.00	
Sulphite easy bleach- ing .....60.00 @ 67.50	
Sulphite news grade.50.00 @ 55.00	

Old Waste Papers

(In carload lots, f. o. b. Toronto)

Shavings—	
White Env. Cut.. 3.75 @ —	
Soft White Book Shavings 3.75 @ —	
White Blk News 2.00 @ —	
Book and Ledger—	
Flat Magazine and Book Stock (old) 2.25 @ —	
Light and Crum- pled Book Stock. 2.10 @ —	
Ledgers and Writ- ings 2.50 @ —	
Solid Ledgers... 1.95 @ —	
Manilas—	
New Manila Cut. 2.00 @ —	
Printed Manilas.. 1.55 @ —	
Kraft 2.50 @ —	
News and Scrap—	
Strictly Overissue .90 @ —	
Folded News.... .80 @ —	
No. 1 Mixed Pa- pers ..... .70 @ —	
Domestic Rag—	
Price to mills, f. o. b. Toronto. Per lb.	
No. 1 White shirt cuttings ..... .11 1/4 @ .11 1/4	
No. 2 White shirt cuttings ..... .06 1/4 @ —	
Fancy shirt cut- tings ..... .06 @ .06 1/4	
No. 1 Old whites .04 @ —	
Thirds and blues .02 @ .03 1/4	
Per cwt.	
Black stockings.. 2.50 @ —	
Roofing stock:	
No. 1..... 1.90 @ —	
No. 2..... 1.40 @ —	
Roofing stock:	
Manila rope..... .06 @ .06 1/4	
No. 2..... .81 1/4 @ —	
Gunny bagging... 1.40 @ 1.45	

The Home of QualityFACTORY
132ND TO 133RD ST & BROOK AVE

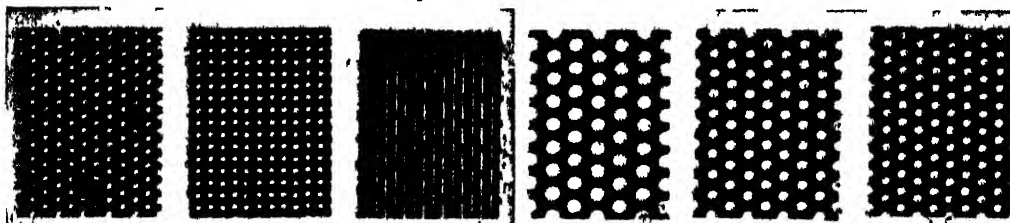
PAPER BAGS

Sacks and Specialties

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SCHORSCH & CO.*Manufacturers***500 East 133d Street : New York**This Registered Trade
Mark Octagonon a Paper
Bag Vouches for
Its Good Quality

PERFORATED METALS

*All sizes
and
shapes
of Holes**All kinds
and
thicknesses
of Metal*

For Centrifugal and Rotary Screens, Drainer Bottoms, Filter Plates, Pulp Washers, etc.

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Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts, for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

33 WEST 42ND ST., NEW YORK

Ecco Clays 500,000 Tons Annually.

DELIVERIES FROM PRODUCER INSURE AND
ENABLE YOU TO PRODUCE UNIFORM PAPER

Highest Grades Filler and Coating Clays

WANT AND FOR SALE ADVERTISEMENTS

CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, \$1.00.

SITUATION WANTED, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and small For Sale Ads, 4 cents a word for each and every insertion. No ads of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

WANTED—Board Machine Tender, eighty cents per hour and steady work year round. Only first class man wanted. Address, Box 5422, care Paper Trade Journal. S-28

WANTED—Experienced Printing Paper Salesman for New England territory. Must be capable of earning good salary. State your full experience in first letter. Address, Box 5423, care Paper Trade Journal. O-12

WANTED—Two Calendar Men. Wages 55 cents per hour. Eight hour day. None but expert workmen need apply. Address, Box 5424, care Paper Trade Journal. S-28

WANTED—A Competent Millwright to take care of all repairs in connection with a two Machine, Chip Board Mill with production of 60 tons 24 hours. Address, Box 5425, care Paper Trade Journal. O-5

WANTED—Boss Machine Tender. Must be capable, thoroughly experienced, give results and willing to prove himself on two Cylinder Machines making Bristol Boards. Good opportunity with chance of advancement. State experience, send copies of references in first reply. Address, Box 5426, care Paper Trade Journal. O-26

WANTED—Two Good Paper Mill Millwrights. Must be familiar with wood room. Good town to live. Cheap rents. Good working conditions. Open shop. Steady men wanted. Address, Box 5427, care Paper Trade Journal. S-28

PAPER SALESMAN WANTED—One who desires to sell on commission for House carrying general line of Papers and card board. Address, Box 5428, care Paper Trade Journal. S-28

SALESMAN WANTED—Can use services of experienced Wrapping, Board, Twine and Specialty Salesman on commission or salary basis for New York City, New Jersey and Connecticut. Communication confidential. Give complete details. Address, Box 5429, care Paper Trade Journal. S-28

WANTED—Superintendent for two Machine Mill making Nine Point Straw for Corrugating. One familiar with water wheels and steam engines preferred. State age, experience on straw and salary required in first letter. Address, The Thompson & Norris Co., Brookfield, Indiana. S-28

WANTED—Experienced Salesman on Toilet Paper and Paper Towels for New England Territory on commission basis. Address, Box 5437, care Paper Trade Journal. S-28

WANTED—Machine tender, back tender and heater engineer. Experienced in making Patent Coated, Manila Lined, Chip and Container Board. No labor troubles. Mill in small town near large city, New York State. State experience and wages wanted. Address, Box 5460, care Paper Trade Journal. S-28

HELP WANTED

MACHINE TENDER for Fourdrinier, also one for Cylinder Tissue Machine, for Pacific Coast. Give full particulars about yourself. Address, Box 5440, care Paper Trade Journal. O-12

WANTED—Machine tender for 96" Machine making Book, Bond and Writings. None but first class man need apply. Address, Box 5441, care Paper Trade Journal. O-12

WANTED—Two first class Cylinder Machine Tenders, also two Finishers for a mill near New York City, three shifts. Address, Box 5442, care Paper Trade Journal. S-28

WANTED—One Machine Tender, two Backtenders and one Third Hand for slow, small news machine. Address, Box 555, Lambertville, New Jersey. S-28

WANTED AT ONCE—Assistant Superintendent to take charge of one Machine Board Mill nights, making 25 tons Newsboard, Tag and Colored Stock. Steady work with future for man who can work hard and get results. State references, wages expected and how soon you could report, in first letter. Address, Box 5443, care Paper Trade Journal. O-12

PAPER SACKS—Experienced man as Superintendent in Plant manufacturing Sacks for Flour, Fuel, Cement, etc., including printing. State full particulars as to salary, experience, in first letter. Address, Box 5459, care Paper Trade Journal. S-28

AN EASTERN MANUFACTURER of Glazed and Plated surface coated box makers' papers wishes to employ experienced salesman familiar with the trade. References required. Address, Box 5390, care Paper Trade Journal. O-5

SITUATIONS WANTED

BOSS FINISHER residing in vicinity of New York City is open for engagement in Coating Mill making Book, Lithographic, Glazed Embossed Fancy Papers and Coated Specialty. Address, Box 5431, care Paper Trade Journal. O-12

GENERAL SUPERINTENDENT or Manager with several years' experience in modern mills manufacturing News, Book, Hankings and Specialties, desires connections with good organizer and producer. New organization. Would consider foreign country. Address, Box 5432, care Paper Trade Journal. S-28

YOUNG MAN, 24, at present employed wishes to make change. Desirous of connecting with reliable concern, where there is possibility for good future. Have worked in capacity as salesman, office man and have had five years of mill experience. Address, Box 5387, care Paper Trade Journal. S-28

MECHANICAL ENGINEER with several years' practical experience as superintendent of ground wood, sulphite and news print mills, would like to make change. Address, Box 5406, care Paper Trade Journal. S-28

PAPER AND PULP MAN: Open for engagement. Extensive experience. Practical knowledge purchasing, manufacturing and selling. Specialty increasing profits. Highest references. Address, Box 5407, care Paper Trade Journal. S-28

SUPERINTENDENT and technical man with nine years' experience in paper making and laboratory research desires opportunity to learn all phases of office administration in up-to-date paper mill. Nominal salary required. Address, Box 5408, care Paper Trade Journal. S-28

MASTER MECHANIC with a large experience in construction, reconstruction and efficiency, desires to make change. Address, Box 5383, care Paper Trade Journal. S-28

SITUATIONS WANTED

SUPERINTENDENT: Now employed desires to make change. Well up on all grades of Board. Can handle help and get production. Can handle own repairs and construction. Address, Box 5409, care Paper Trade Journal. O-12

SUPERINTENDENT of ability open for position. Expert on colors, familiar with all grades of board. Understands plant thoroughly. Is a good executive and can get results. Address, Box 5384, care Paper Trade Journal. S-28

WANTED: By a New York Manager and Representative of an out of town Manufacturer of Toilet Paper and Paper Towels, similar connection with reputable manufacturer. Have been in the line over 20 years, over 15 years of which I have spent with my concern. Address, Box 5114, care Paper Trade Journal. S-28

SULPHITE SUPERINTENDENT, 20 years' practical and technical training, wishes to get in communication with Managers of Mills who want the best and are not getting it. Address, Box 5353, care Paper Trade Journal. O-5

MECHANICAL ENGINEER; 12 years' experience with thorough knowledge of power plant operation and engineering. Will submit record for investigation to executive requiring reduction in power costs and coal consumption. Address, Box 5400, care Paper Trade Journal. O-5

SALESMAN—Ten years' experience as paper Broker, Coated, Book and Fine. Wants to make new connections, for Philadelphia District. Address, Box 5444, care Paper Trade Journal. O-12

MILL CONNECTION WANTED by young man with several years' experience in manufacture and sale of Wood Pulp, Wrapping, Waxed Papers, and Paper Specialties. Will open office to represent mills and sell on commission basis in New England. Address, Box 5445, care Paper Trade Journal. O-12

POSITION WANTED—Young man with several years' experience with manufacturers and jobbers of paper would like position as manager of mill. Address, Box 5446, care Paper Trade Journal. O-12

ASSISTANT to General Manager or President as Plant Manager. Experienced on Ground Wood and News. Capable taking entire charge as Executive. Desirable connection wanted rather than immediate large salary. Address, Box 5447, care Paper Trade Journal. O-5

SALESMAN with University and Practical Education, 36 years old, wishes to affiliate with mill making bonds, writings and envelope stocks. To travel the middle west or Pacific Coast. Address, Box 5448, care Paper Trade Journal. O-12

PURCHASING AGENT open for engagement. Fifteen years paper mill experience, ten years with one of largest Paper Mills in the country. References furnished from present employer. Address, Box 5449, care Paper Trade Journal. O-12

SITUATION WANTED—A treasurer of one of the largest Paper Jobbing Houses in the country desires to make a new connection. Have formulated company's financial policies, in charge of its credits, collection, accounting, taxation matters of all kinds, etc. Am still holding and have held this position with this one concern for 15 years. Am 46 years of age and have been constantly engaged in the paper business for many years. Address, Box 5450, care Paper Trade Journal. S-28

WANTED—A position as tour foreman in mill making Manillas, Bond, Kraft, or Wrappers by middle aged married man with 25 years' experience. Will accept position as Machine Tender where there is a chance for advancement. At present employed. Address, Box 5451, care Paper Trade Journal. O-5

SITUATIONS WANTED

SALESMAN—Specialist on Coated Lithographic Papers and Boards; also Offset and Printing Papers, desires to connect with mill or dealers having mill connections. Can produce good business. Address, Box 5280, care Paper Trade Journal. S-28

PULP AND PAPER CHEMIST with thorough technical training and twelve years' practical experience with present employers, wishes to change to progressive company desiring to improve efficiency of manufacturing operations. Competent to organize and direct technical department for testing, control of mill operations, experimental and research work. Address, Box 5452, care Paper Trade Journal. O-19

WANTED: POSITION as Machine Tender on Straw, Corrugating and Chlp. Can furnish best references from different concerns. Address, Box 5461, care Paper Trade Journal. O-5

YOUNG MAN, age 26, honest, reliable and discreet; having learned paper making under my father, who was a Mill Superintendent. Have worked in all departments of mill. Ran Fourdrinier, Cylinder and Yankee Machines, am running news machine now, but am ambitious and want to advance. Would make good assistant to President, Manager or Superintendent. Address, Box 5457, care Paper Trade Journal. O-5

YOUNG MAN, 32 years of age, technical education, 10 years' experience covering Physical and Chemical Testing of Pulp and Paper, Chemicals, etc.; Experimental and Development Work on Cotton Linters, Long Leaf Pine, Sugar Cane (Bagasse), etc. Have a thorough knowledge of Pulp and Paper Machinery and Operation of same. If you have a position open in your organization which requires technical and practical knowledge of Paper Making Processes let me confer with you personally regarding my experience, ability, etc. Best of references. Open October 1st. Address, Box 5458, care Paper Trade Journal. O-5

SUPERINTENDENT of ability, now employed, desires to make change. Twenty-five years' experience on all grades of board. Expert on colors. Can handle repairs and get production. Address, Box 5455, care Paper Trade Journal. O-5

FOR SALE

FOR SALE—One "Sheridan," new model, 36-inch Guillotine Automatic Paper Cutter, belt driven, with one extra knife and fifteen cutter knife sticks. Address, Box 5433, care Paper Trade Journal. O-12

FOR SALE—6 Farnum Drives. Complete Triple-Deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

FOR SALE—1 standard Pneumatic Save-all design No. 6 equipped with a No. 1 blower. Brand new. Still in original crate. Address, Box 5453, care Paper Trade Journal. S-28

FOR SALE—Two Potdevin Glassine Bag Machines. Perfect condition. Price reasonable. Write for further information. The Peerless Mfg. Co., Norristown, Pa. S-28

MISCELLANEOUS

WANTED—One Nash Hytor Turbine Vacuum Pump. Number four or number six. Write Mill Department, Rose Lithographic Corporation, 55 33rd Street, Brooklyn, N. Y. O-5

CYLINDER MOULDS WANTED—Either 36 or 30 inches diameter and anywhere from 80 to 88 inches face. Price must be reasonable. Address, H. O. Ruby, York, Pa. S-28

ADVERTISER wishes to correspond with party owning small Paper Mill with Fourdrinier Machine about 76 inches wide, to manufacture specialty realizing large profits. Further particulars. Address, Box 5414, care Paper Trade Journal. S-28

MISCELLANEOUS

WANT TO PURCHASE—One Cutter for cutting Jumbo Rolls, 72 inches trim, into sheets. Address, Box 5454, care Paper Trade Journal. S-28

FOURDRINIER MACHINE WANTED—State size, condition, and price fully and where can see machine. Price must be f.o.b. care. Address, Box 5455, care Paper Trade Journal. O-12

A well known and long established Firm in Sweden, with excellent Pulp Mill connections in Scandinavia, desires to be represented in United States. We desire a party who is well acquainted with users and buyers of high grade pulps. Address, Box 5439, care Paper Trade Journal. O-5

Do You Want Help?

Or have you some machinery you would like to dispose of?

Try the Want Pages

of the

Paper Trade Journal

MISCELLANEOUS

SHARTLE

can fill your requirements in used or new machinery.

THE SHARTLE BROTHERS MACHINE CO.

Middletown

Ohio

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About 35,000,000 Kilowatt Hours per year available at Tonawanda, or North Tonawanda, New York.

Will make attractive rate to anyone who can utilize this power.

Location at the foot of navigation of the Great Lakes and the Western Terminus of the New York State Barge Canal.

Rail transportation facilities unsurpassed. Labor and Living Conditions Good.

Tonawanda Power Company

North Tonawanda, N. Y.

O-3

Rebuilt Paper Mill Machinery

In Stock and Guaranteed

Not Where Is and As Is

FOURDRINIER TISSUE MACHINE—One 68" FOURDRINIER PARTS—Pusey & Jones 118", 100" Cutter Troughbridge 96"

PRESS PARTS FOR PAPER MACHINES—Pusey & Jones bell crank housing with rolls 18" x 117", Black & Clawson swing arm housing.

DRYERS Four 48" x 111", one 36" x 80", two 36" x 73", four 48" x 68", one 84" x 67", eleven 42" x 60", two 36" x 48", four 20" x 40".

CHILLED CALENDERS—One 86" six roll, one 82" five roll, one 66" five roll, one 54" five roll, two 58" five roll.

DILLON DOCTOR—For machine calender 60" to 144" size.

SLITTERS & WINDERS—One 12" Warren, one 18" Kiddier, one 110" two drum Moore & White.

REELS—Pusey & Jones two drum, Rice, Barton & Fales two drum.

BEATERS Four N. & W. 72" x 42", one Ditta 62" x 50" iron tub, one Jones 62" x 52", one Dillon 60" x 48", two Emerson 54" x 60", three Birmingham 54" x 42" iron tub, two Emerson 53" x 52", seven Horne 36" x 36", two No. 2 Clafins, two No. 1 Clafins. One 36" x 26" N. & W.

JORDANS—One Appleton Wagg Majestic, two No. 2 Dillon Improved, one Large Horne, two Monarch, one Jones Standard, one Pope brush-ing engine.

SCREENS—Two 12 plate, two 8 plate, open side Parker screens. Two 6 plate, one Moore & White auxiliary.

STUFF PUMPS—Deane triplex 9" x 8", Goulde triplex 8" x 10", Sandusky triplex 4" x 6", Moore & White duplex 8" x 12", One Beloit duplex 6" x 14". Two 6" Post.

REVOLVING SHEET CUTTERS—One 82" and 63" Clark, five 61" Hamblets, four 61" Finlays, one 50" Hamblet diagonal, one 42" Finlay.

REAM CUTTERS—One 48" Acme, one 45" Hol-voke Seybold.

SUPER CALENDERS—One 52" Holyoke, one 45", one 42", one 36".

WET MACHINES—Four 72" Bagley & Sewall Hydraulic, one 48" Noble & Wood, One Manistee Hog Chipper, One Ryther & Pringle Shredder. We have a large number of pumps and over five hundred calender, press and couch rolls in stock.

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The capital stock of a well-known and firmly established fine paper company, located in New York City, is offered for sale in whole or in part. The company owns or controls a number of popular brands of bond, ledger and writing papers.

An excellent opening for an out-of-town concern to enter the New York market, or for the purchase by an individual of an interest in a going business.

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41 Park Row **New York City**

Paper Salesmen Mill Agents Brokers

If you have an established trade and cannot do your customers or yourself full justice because of insufficient capital—lack of organization or weakness in your mill connections—get in touch with us. We will show you how to expand to your fullest capacity. Write us in strict confidence to Box 5456, care Paper Trade Journal.

FOR SALE

Paper Bag Manufacturing Plant

Acting under an order of the District Court of the United States for the Eastern District of Virginia, the undersigned will on

THURSDAY, OCTOBER 12th, 1922

Beginning at 10:30 O'clock, A. M.

offer for sale at public auction on the premises Nos 1400-1408 West Marshall Street, Richmond, Virginia, the office furniture and fixtures, machinery, appliances, tools and supplies, formerly owned and used by the Eagle Paper Company in the conduct of the manufacture of paper bags on said premises.

The property offered for sale embraces office furniture and supplies and the following machinery: 4 Potdevin bag machines, 33 Phelps bag machines, 10 Remington square bag machines, all belt driven and fully equipped; 2 National Machine Company's 5 pitch screw machines; 2 Champion paper blower machines; 1 White washing machine; 1 Seybold cutting machine; 2 Re-winding machines; 10 bundling machines; 1 Cincinnati milling machine; 1 shaper machine; 1 drill press; 1 belt lacing machine; 1 Rotary printing press; 1 waste paper baling press; 1 stencil cutting machine; 3 freight trucks; 1 Ford truck; 173 square 4 roller trucks; cabinets for stencil plates, knives, labels, belts and tools; time recording clocks; steam, bundling, printers and lunch tables; portable scales; 1 set of blacksmith tools and large assortment of fine first-class tools.

A complete inventory of the property will be promptly forwarded by the undersigned on application therefor.

Responsible bidders may arrange satisfactory terms by communicating with the undersigned in advance of sale.

For a number of years the property now offered for sale was used on the said premises in the conduct of an extensive and profitable paper bag business. The buildings in which the property is located consist of two large concrete and brick four story buildings with 100,000 square feet of floor space. They were planned and constructed for a paper manufacturing plant and are equipped with boilers, engines, dynamo and a modern sprinkler system. A railroad siding, R. F. & P. Railroad, runs alongside of the buildings. All machinery and other equipment are believed to be in good condition and ready to be put into active operation. The owners of the lot and buildings are ready and willing to open negotiations with prospective purchasers for a lease thereon and communications to this end may be addressed to the undersigned.

The undersigned will give prospective purchasers an opportunity of seeing and examining said property before the day of sale.

**ROBT. N. POLLARD, RECEIVER,
TIMES-DISPATCH BUILDING
RICHMOND, VIRGINIA.**

**MILLER & MILLER, Attorneys for plaintiff,
Richmond, Va.**



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& CHEMISTS**
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Hardwood and Freehold Pulpwood Lands are in active
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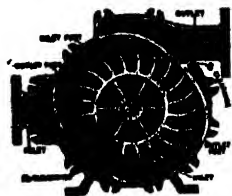
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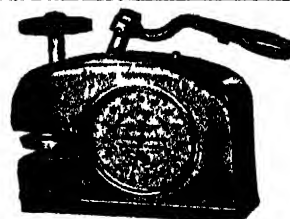
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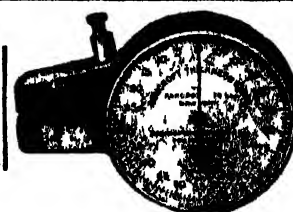
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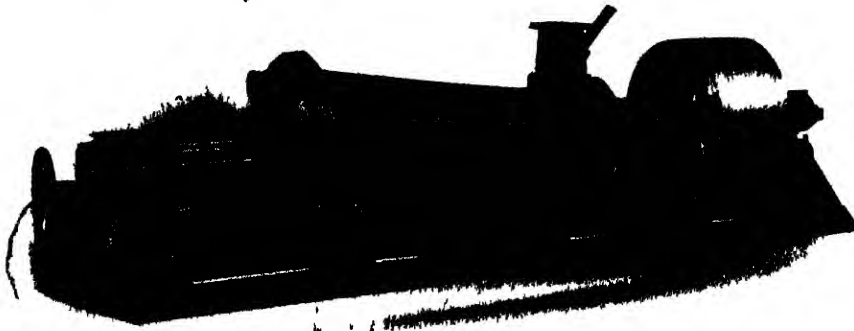
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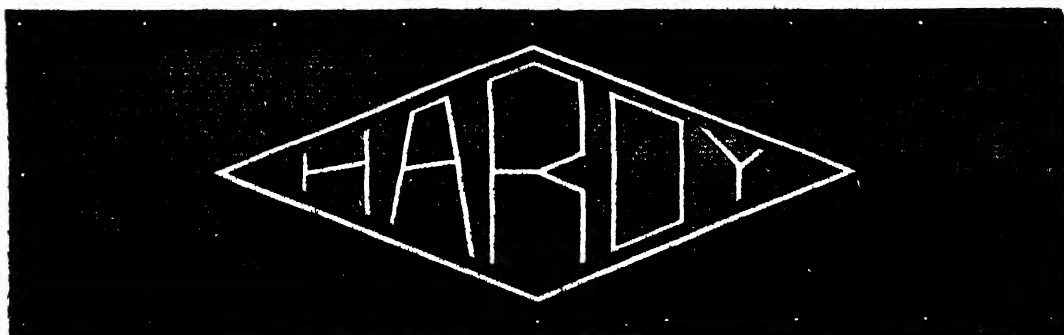


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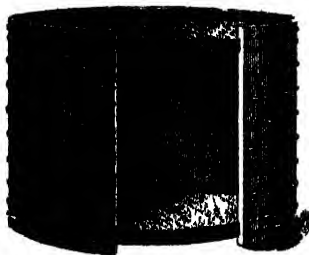
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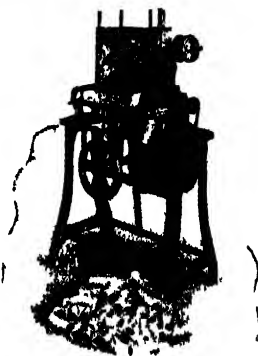
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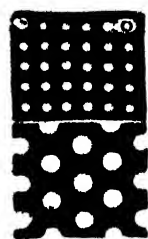


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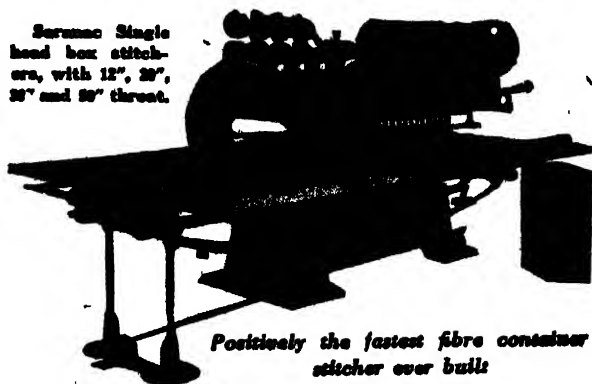
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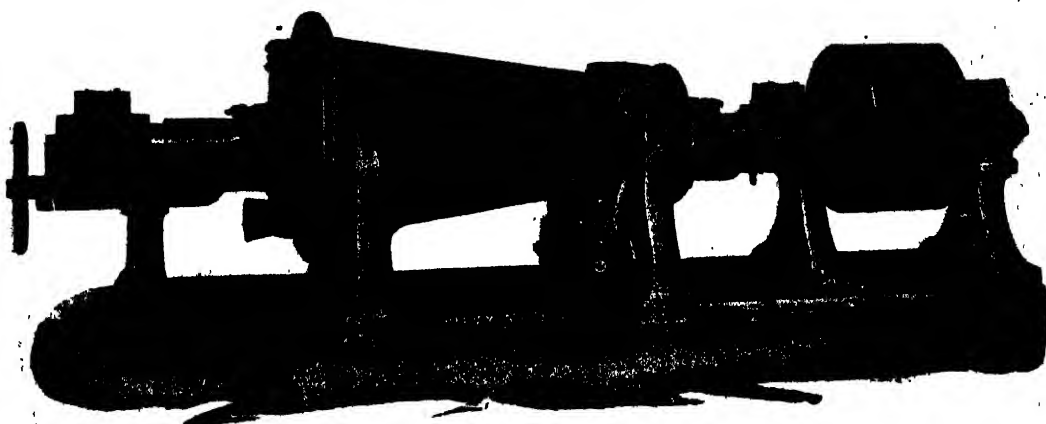
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Hanna Paper Corporation.		5	Hudson-Sharp Machine Co.		—	Price & Pierce, Ltd.		Front Cover
Howard Paper Co.		65	Shurtle Bros.		73 and 75	Pulp & Paper Trading Co.		40
Missisquoi Pulp & Paper Co.		40	PUMPS (VACUUM).			SULPHUR.		
Mountain Mill Paper Co.		65	The Nash Engineering Co.		77	Texas Gulf Sulphur Co.		7
St. Regis Paper Co.		5	PRESSURE BULKERS.			Union Sulphur Co.		80
Sherman Paper Co.		77	B. F. Perkins & Sons, Inc.		11	TANKS (Water, Oil, etc.).		
Stratford Paper Co.		77	RAG CUTTERS.			Biggs Boiler Works Co.		—
Wausau Sulphate Fiber Co.		—	B. F. Perkins & Sons, Inc.		11	W. F. Caldwell Co.		—
West Virginia Pulp & Paper Co.		65	RECORDING INSTRUMENTS.			New England Tank & Tower Co.		87
PAPER AND PULP MACHINERY.			Taylor, Stiles & Co.		—	Stearns Lumber Co., A. T.		—
Appleton Machine Co.		38	RECORDING TACHOMETERS.			Tokheim Oil Tank & Pump Co.		—
Bagley & Sewell Co.		—	Bristol Co.		39	Woodford Wood Tank Co.		80
Baker Mfg. Co.		83	ROLL GRINDERS.			TEMPERATURE RECORDING.		
Beloit Iron Works.		25	Bridell Car Wheel Co.		46	Bristol Co.		39
Bird Machine Works.		21	ROBIN.			TIMBER ESTIMATES.		
Black-Clawson Co.		11	Hercules Powder Co.		—	The Bradley Sales Agency.		76
Clark-Aiken Co.		12	ROBIN SIZE.			James W. Sewall.		76
Frank H. Davis.		73	Aralmi Mfg. Co.		17	TIME RECORDS.		
Dowdington Mfg. Co.		86	Paper Makers Chemical Co.		78	Bristol Co.		39
Glens Falls Machine Works.		63	Western Paper Makers Chemical Co.		78	TRANSMISSION MACHINERY.		
Hudson Sharp Machine Co.		—	Western Paper Makers Chemical Co.		78	H. W. Caldwell Co.		3
Improved Paper Machinery.		61	ROTARY BLEACHING BOILERS.			Hill Clutch Co.		—
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Shurtle Bros. Machine Co.		73 and 75	SAVEALLS.			Weller Mfg. Co.		—
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Waterville Iron Works.		2	Paper Makers Chemical Co.		78	American Manufacturing Co.		38
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McIver Dana T.		2	Fied Baker.		—	Crane Co.		77
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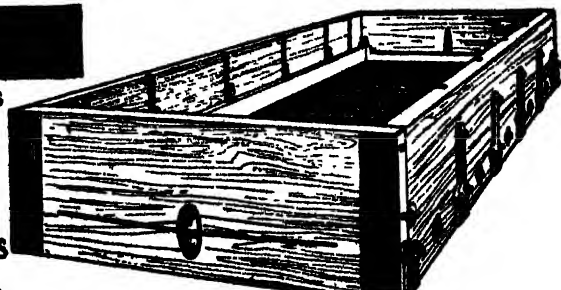
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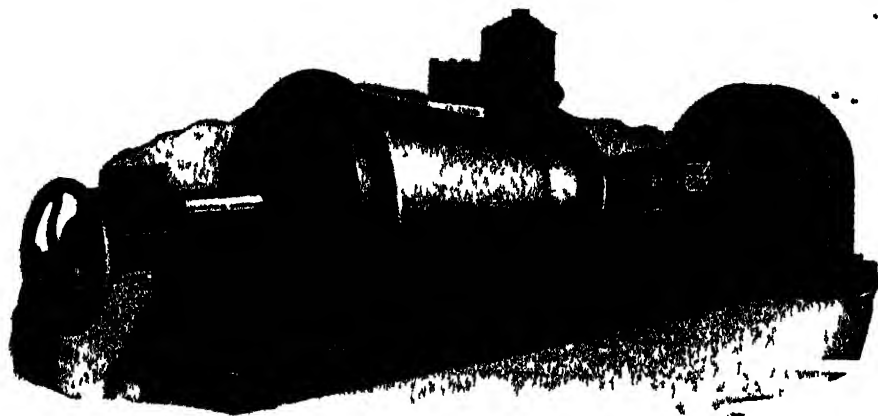
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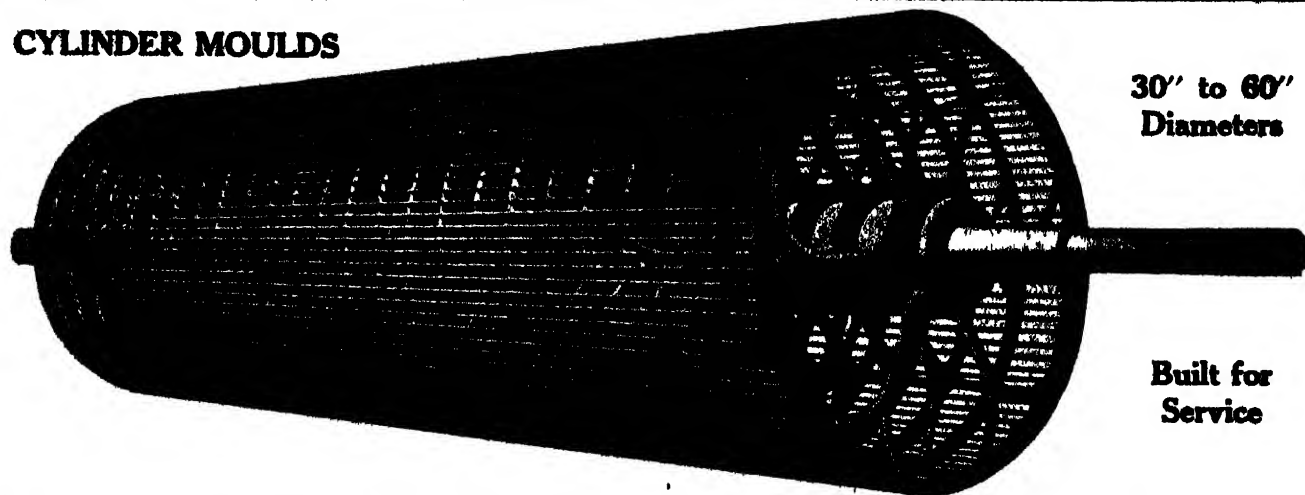
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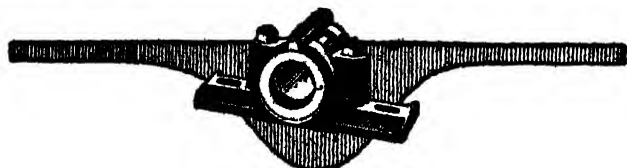
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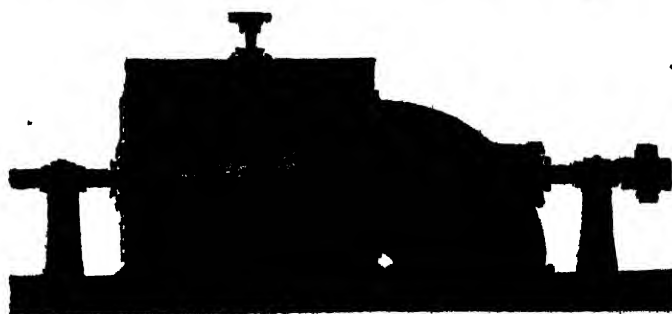
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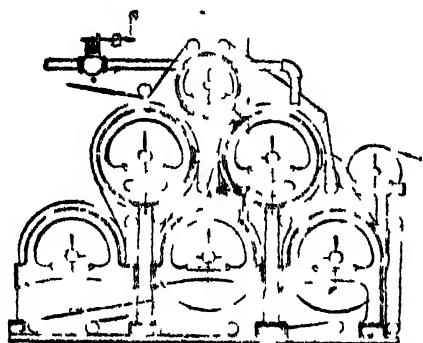
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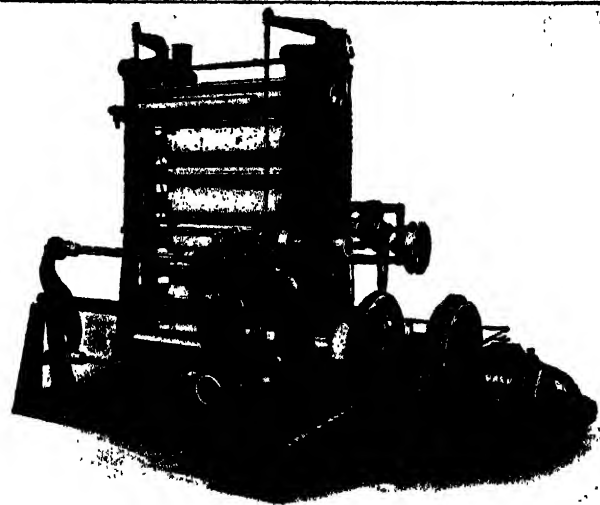
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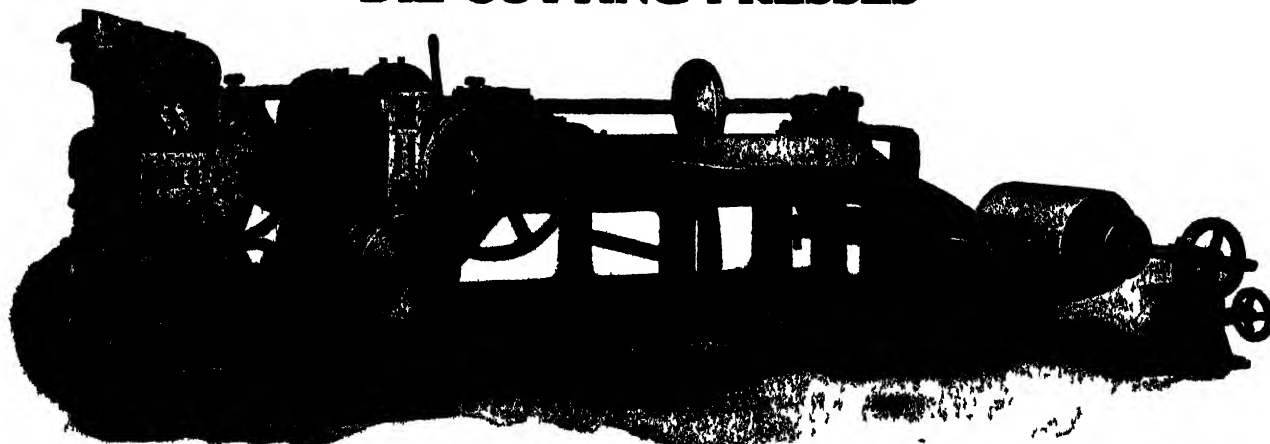
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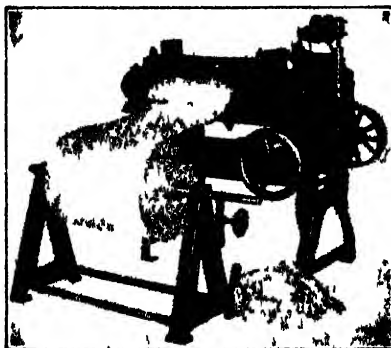


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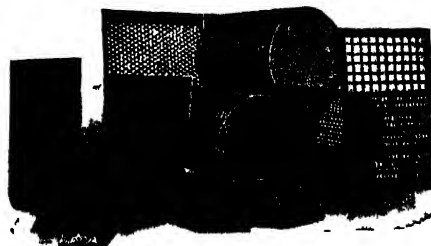
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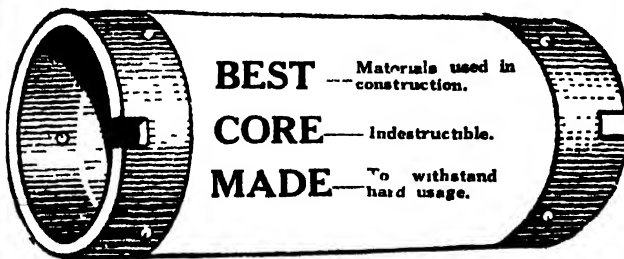
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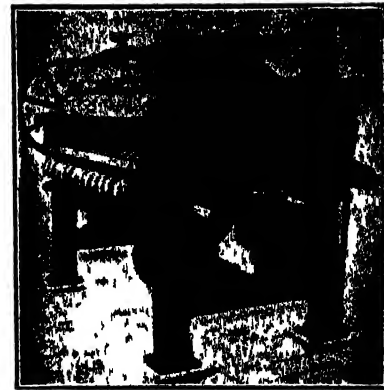
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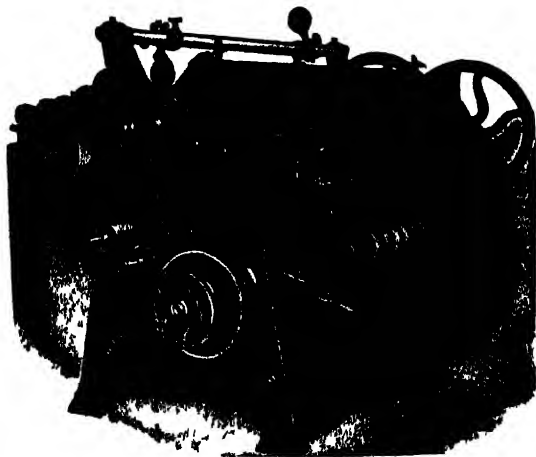
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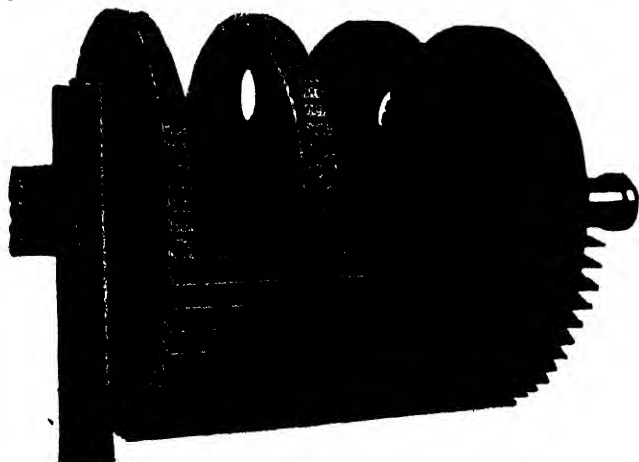
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FIFTY-FIRST YEAR

PUBLISHED EVERY THURSDAY BY THE

LOCKWOOD TRADE JOURNAL COMPANY, INC.

LESLIE R. PALMER, President

J. W. VAN GORDON, Vice-President

Telephone { 2380
2381
2382 }

Vanderbilt

10 EAST 39TH ST., N. Y., U. S. A.

Cable Address Catchow, New York

Western Publication Office—431 S. Dearborn Street, Chicago
New England Office—Room 46, 127 Federal Street, Boston

Washington Office—L. M. Lamm, 63 Home Life Bldg.
Western New England News Office—Michael Connor, Holyoke
London Office—Stonhill & Gillis, 58 Shoe Lane

THE PAPER TRADE JOURNAL is the pioneer publication in its field, and has for many years been the recognized Organ of the Paper and Pulp Industry. Its circulation is greater than the combined circulation of all other publications in the field. Entered at New York Post Office as second-class mail matter.

Terms of Subscription

UNITED STATES AND MEXICO.....Per year, \$4; 6 months, \$2; 3 months, \$1
CANADA AND FOREIGN COUNTRIES IN POSTAL UNION.....Per year, \$6
SINGLE COPIES.....10 cents

Other Publications of Lockwood Trade Journal Company, Inc.

AMERICAN STATIONER AND OFFICE OUTFITTER (Weekly).....Per year, \$3
LOCKWOOD'S DIRECTORY OF THE PAPER
STATIONERY AND ALLIED TRADES (Annual).....Per copy, \$7

Vol. LXXV. No. 25

NEW YORK AND CHICAGO

Thursday, December 21, 1922

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FEDERAL COMPLAINT AGAINST COAST PAPER MEN

Arbitrary Designation as to "Legitimate" or "Illegitimate" Dealers Among Factors Involved in a Complaint Issued by the Federal Trade Commission Against the Pacific States Paper Trade Association, Its Officers and Members—Commission Avers That Enforced Price Schedules Are Maintained by Agreement

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., December 20, 1922 Arbitrary designation as to "legitimate" or "illegitimate" dealers and the same adjectives applied to the channels through which their trade flows are among the factors involved in a complaint issued by the Federal Trade Commission against the Pacific States Paper Trade Association, its officers and members.

The Association, through its membership comprising a number of, "local associations," the complaint states, embraces practically all the wholesale dealers in paper and paper products throughout the States of Oregon, Washington and California. Other states affected in great part by the activities of the Association are Idaho, Nevada, Arizona, Montana, New Mexico, and the territory of Alaska.

Averments by the Commission are to the effect that by concerted agreement, adherence of members of local associations to the maintenance of enforced schedule prices, is consummated. It is further alleged that to the end that such schedule prices may be maintained and price competition eliminated throughout the Pacific States, the members notify their local associations and the Pacific States Paper Trade Association of infractions of the agreement to maintain standard prices, and these various associations bring pressure to bear upon the offending member to cease such practice.

Respondents Named in Complaint

The respondents named in the complaint and who are given thirty days to make answer before the case goes to trial are:

Pacific States Paper Trade Association, B. N. Coffman, secretary; Seattle-Tacoma Paper Trade Conference, J. Y. C. Kellogg, secretary; Spokane Paper Dealers, W. B. Gilbert, secretary; Portland Paper Trade Association, Chriss A. Bell, secretary; Paper Trade Conference of San Francisco, B. N. Coffman, secretary; and Los Angeles Wholesale Paper Jobbers, J. R. Coffman, secretary.

The companies composing the above associations are:

American Paper Company, J. W. Fales Paper Company, Mutual Paper Company, Washing Pulp and Paper Corporation, Paper Warehouse Company, Inc., and The Seattle Paper Company, all of Seattle, Wash. Standard Paper Company and Tacoma Paper and Stationery Company of Tacoma, Wash., Zellerbach Paper Company, Blake, Moffit & Towne, Bonestell & Co., and Pacific Coast Paper Company, all of San Francisco, Cal.; John W. Graham & Co., Spokane Paper and Stationery Company, B. G. Ewing Paper Company and American Type Founders Company, all of Spokane, Wash.; Rogers Paper Company of Salem, Ore., Blake-McFall Paper Company, J. W. P. McFall, Endicott Paper Company, and R. L. Brackett and Chas. L. Frazier, partners, all of Portland, Ore.; Union Paper Company of Oakland, Cal.; San Jose Paper Company and Delmas Paper Company of San Jose, Cal.; Richardson Case Paper Company and Eastman Gibbons Paper Company of Sacramento, Cal.; and Pioneer Paper Company, Standard Woodenware Company, R. L. Craig Company and Sierra Paper Company, all of Los Angeles, Cal.

A hearing on the charges set forth in the complaint will be held January 18, in the office of the Federal Trade Commission at Washington, D. C.

The complaint in part is as follows:

Paragraph Two

By the common consent and agreement of the members, only

dealers in paper or paper products who are dealers at wholesale only, who maintain a warehouse stock of the commodities in which they deal, from which they make delivery of the commodities sold by them, and who employ traveling salesmen through whom such sales are made, are entitled and admitted to membership in any foregoing association. A wholesale dealer thus qualified and defined is recognized by the members generally as having the right further to take orders for wholesale quantities of aforesaid merchandise to be filled by shipment to the purchaser directly from the manufacturer or other source of supply. Wholesalers, as above defined, are regarded by the members and are by them designated "legitimate wholesalers," and the distribution of paper and paper products from the manufacturers or other source of supply thereof, through such wholesalers to retail dealers and other large-quantity consumers, is regarded as being and is designated by the members the "legitimate" channel or channels of distribution. All other methods of wholesale distribution are regarded by the members as improper and illegitimate, and all dealers, brokers, agents, manufacturers dealing directly with the retail trade or the consumer, and other persons selling said products in wholesale quantities, who do not maintain warehouse stocks, traveling salesmen or otherwise come within the definition of the so-called legitimate wholesalers, as above set out, are regarded and designated by the members as "illegitimate" dealers.

Paragraph Three

For about three years last past, the Pacific States Paper Trade Association, the local associations and the members, with the common purpose of restricting the wholesale distribution of paper and paper products throughout the Pacific States to the so-called "illegitimate" channels and of preventing such distribution by any other method or means or through any other agency than themselves, and with the further common purpose of suppressing competition in, and controlling and enhancing wholesale prices of, said products in the Pacific States to their own collective benefit, co-operating together have done and now do the following acts and things:

(a) The members refuse to sell to, or in any way supply so-called illegitimate dealers with paper and paper products;

(b) The members report to their respective local associations and to the Pacific States Paper Trade Association the names of all so-called illegitimate dealers in the Pacific States who come to their notice, and attempt to, and do, coerce manufacturers and other sources of supply into refusing to further supply said dealers with paper and paper products; and in instances where such offending dealer is a manufacturer desiring to sell directly to the retail trade or consumer, attempt to, and do coerce such manufacturer into abandoning such intended business;

Said coercion is accomplished by the members acting individually, and collectively through respondent associations, to bring to bear threats of boycott and other species of intimidation against said manufacturers and other sources of supply;

(c) To the end that the members be continuously advised of the progress of the coercive measures set out in the preceding specification, and to the end that uniform action may be had, action taken by the members individually and by the local associations is notified to the Pacific States Paper Trade Association, and vice versa, and the Pacific States Paper Trade Association informs the local associations and the members of such action as has been

taken and takes such action itself and recommends and directs such further action by the members and the local associations as it deems best calculated to carry said coercive measures to a successful conclusion:

(d) The members of each local association agree upon and establish schedules of uniform minimum prices at which the commodities dealt in by them are to be sold by them in the territory of such association. The prices thus established are enhanced beyond the prices which would prevail under natural and normal competition in said industry in the absence of said price agreement;

(e) The adherence of members of the local associations to the schedules described in the preceding specification is assured and the maintenance of the prices therein fixed is secured by a system of fines provided for by the local association to be, and which are, exacted from any member making a sale or sales of said commodities at prices less than those set out in said schedules. The prices thus fixed, established and enforced are hereafter called schedule prices;

(f) That there may be a substantial uniformity in schedule prices throughout the Pacific States, providing for aforesaid enhancement of prices, the associations exchange said price lists with each other and supply the same to the Pacific States Paper Trade Association, to the end that by comparison and adjustment substantial differences in prices for like goods may be, and they are, eradicated by causing such prices as are below the general level of said enhancement and the average of said aggregate schedule prices, to be adequately raised.

(g) By common consent and agreement the members of each local association, when soliciting business or making sales in the territory of another local association, observe and abide by the schedule prices in effect in the territory where the sale is made and neither offer nor sell paper or paper products in such territory at prices less than said schedule prices.

(h) To the end that aforesaid uniform enhancement may be maintained and price competition eliminated throughout the Pacific States, the members notify their local associations and the Pacific States Paper Trade Association of infractions of the agreement set out in the foregoing specification, and these various associations bring pressure to bear upon the offending member to cease such practice. They, and each of them, are empowered to, and do levy fines against such offending members and are empowered to declare, and do declare, such territory to be "open"; that is to say, that the members of the various associations may, and they do, until rescission of said last named action, disregard the schedule of prices in effect in said territory and sell their commodities therein at such prices as they see fit to demand.

The result and effect of the foregoing practices has been and now is substantially to lessen and restrict competition in the sale of paper and paper products in the Pacific States; to prevent brokers, agents and manufacturers selling direct to the retail trade or consumer and other persons not members of the local associations from selling paper and paper products at wholesale in the Pacific States, to enhance the wholesale prices of said commodities above the prices which would prevail therefor under normal, natural and open competition, and to hinder the natural flow of commerce in said commodities in the channels of interstate trade.

Paragraph Four

The above alleged acts and things done by respondents and by each of them, have a dangerous tendency unduly to hinder competition and to create a monopoly of the wholesale paper trade in the Pacific States in the hands of respondents and constitute unfair methods of competition in commerce within the intent and meaning of Section 5 of an Act of Congress, entitled, "An Act to Create a Federal Trade Commission, to define its powers and duties, and for other purposes," approved September 26, 1914.

\$25,000,000 Hydro-Electric Development for Quebec

Actual work on harnessing of the power resources of Lake St. John and the Saguenay River, in the Province of Quebec, Canada, was announced Monday by a company composed of United States and Canadian financiers.

Heading the company is James B. Duke, and associated with him is Sir William Price, of Price Brothers & Co., Ltd., Quebec, one of the largest print paper firms in the Dominion of Canada, who is vice-president. Other officers include W. S. Lee, H. L. Brown and J. M. McCarthy as vice-president; W. C. Parker, secretary and treasurer, with George C. Allen and W. R. Perkins, of the board of directors. All of the foregoing are residents of the United States with the exception of Sir William Price and Mr. McCarthy, who are citizens of Canada.

The company, incorporated under the laws of Canada, is capitalized at \$25,000,000, the entire capital stock having been subscribed by Mr. Duke and by Sir William Price.

Two developments for electric power plants are provided for in the plans of the company—the first at the point where the lake feeds its waters into the head of the river, which will furnish 40,000 horsepower, and in due course a second development will be made which will add an additional 800,000 horsepower of a total of 1,200,000. The last development will be at a point approximately twenty-two miles from the lake, at a point where the river drops directly into tide-water only a few miles from present available navigation. The work already started, Mr. Duke said, is on the last development at the junction of the lake and the river.

As a part of the plan it is announced that Price Brothers, Ltd., have entered into a contract with the new company for 200,000 horsepower to be used in their paper mills, high power transmission lines from the first plant to lead directly to the Price mills. It is also announced that the paper manufacturing company, with the new power available, is adding new mills, which will make the company the largest producer of news print paper in the world.

It will be approximately two years, Mr. Duke explained, before the first of the new power will be delivered. In the meantime the development plans include the construction of a railway which will tap the Canadian National lines at Herbertville and the building of the power plant, which, briefly described, will consist of twelve units, each capable of developing 35,000 horsepower.

To secure a continuous water pressure even in the coldest of weather dams will be constructed which will raise the level of Lake St. John twenty feet, permitting a continuous flow to the turbines beneath a greater thickness of ice than has ever been recorded in that district.

Mr. Duke and several of his New York associates in the enterprise recently returned from a visit to Canada. He said that the project, which had been in his mind since 1912, was made possible through the assistance of Hon. L. A. Taschereau, Prime Minister of the Province of Quebec, who has had the vision and foresight to see that this presents unlimited possibilities for the development of the natural resources of his province. The engineering part of the development has been placed in charge of W. S. Lee, a well-known electrical and hydraulic engineer.

The work now actually under way, Mr. Duke stated, includes the sinking of the coffer dam for the power plant foundations, the construction of the connecting railway over which the material will be handled, and the preliminary steps necessary to raise the level of the lake to the desired height. Contracts for the necessary electrical machinery are now being made ready for tenders from the companies engaged in that line of work.

It is not only the paper mills which will benefit by the development, Mr. Duke added, but the entire province. Less than 100 miles from Quebec, the country is richly developed and affords numerous opportunities for industrial plants. Price Brothers' paper mills alone, Mr. Price said, will effect a saving of \$1,000,000 a year in coal through the use of this electric power.

LOW WATER BIG HANDICAP TO NEW YORK PULP MILLS

Production Has Already Been Greatly Reduced and Practically No Ground Wood Is Available—Streams in Canada, Wisconsin, and Elsewhere, Are Drying Up and Paper Concerns Everywhere Are Suffering—Algonquin Paper Corp. Is Name of New Company Just Organized to Take Over Property of Ogdensburg Paper Mills, Inc.—Newton Falls Paper Co. Officials Visit Plant.

[FROM OUR REGULAR CORRESPONDENT.]

WATERTOWN, N. Y., December 18, 1922.—An industrial crisis now looms menacing and apparently unavoidable in this section of the state, due directly to the unprecedented drought which obtains. Without water power the mills along the Black river and other streams of the region must shut down, and already the streams are at record low water mark with no prospects of relief in sight. Plants are already seriously handicapped and many will be down entirely soon if the unexpected does not happen and heavy rains save the situation.

The paper mills along the Black river are always first to feel the effects of low water and already production is greatly reduced. It has been impossible to operate ground wood mills, and without ground wood paper can not be manufactured. Manufacturers say that there is practically no ground wood available, every pound on the market having been picked up. Unless the wood mills can be started the paper machines must go down when the present limited supply is exhausted.

The big St. Regis Paper Company plant at Defriet, with plants in all sections of the United States and Canada, is beginning to suffer seriously. One machine has been down considerably of late and it is expected that continued drought will soon shut down all the plants dependent upon production of wood pulp. It is said that the dry streams obtain in Canada, Wisconsin, Pennsylvania and the East and that paper companies everywhere are suffering.

The dire necessity for water storage facilities is emphatically emphasized. Were the plans of the Board of the Black River Regulating District now effective the trouble would not be possible. With five times the present capacity of the Stillwater reservoir available, the summer low water period would have been relieved and there would be available at this time as much water as the present capacity of the reservoir. This would save the day.

With no rains and no water in the ground and the ground and streams about to take on the usual coating of ice, the winter looks dismal for the paper industry. Paper manufacturers do not care to broadcast pessimism, but they admit that the country is very liable to run short of news print paper in the near future as a direct result of the drought and no counteracting storage of water. Even the hydraulic plants will have their horsepower reduced to a minimum by the low water.

Algonquin Paper Corp. Formed

Algonquin Paper Corporation is the name selected by the new company which has just been organized to take over the property of the Ogdensburg Paper Mills, Inc., and start a large paper mill in Ogdensburg. The concern is capitalized at \$2,000,000 and the controlling stockholders are Frank A. Augsbury, president of the George Hall Coal and Transportation; Stuart D. Lansing, president of the Bagley and Sewall Company, and G. M. McKee, formerly of the Donnancon Paper Company. As soon as the incorporation papers are approved officers will be elected.

The contracts for power, machinery and equipment have been agreed upon and are ready for signatures when officers are elected. Option on the Continental building has been exercised, and the new company has purchased adjacent properties on which the siding will

be laid. G. M. McKee is to be the general manager and takes up his duties this week.

Plans for the new building which is to house the big paper machine are now being perfected by Charles A. Eaton, local paper mill and hydraulic engineer, and work will start at once. The Bagley & Sewall company will build the machine. The mill will employ 190 men and will have an output of 80 tons daily.

The main building will be lengthened 120 feet and widened about 18 feet to accommodate the machine. The roof over the main part of the plant will be removed and lowered to one story. The dock will be enlarged and a pond provided for holding pulpwood, all of which will be delivered direct to the mill by boats from Canada.

It is estimated that about 20,000 cords of wood a year will be used and the docks will be modernly equipped with machinery for unloading purposes. Water shipment of the manufactured product to lake ports will be made from the docks. During the winter season the work on the docks will be completed, and the work on the building will progress as weather permits. It is expected that the mill will go into operation some time next June.

Officials Visit Newton Falls Paper Co.

Several officials of the Newton Falls Paper Company made a visit of inspection to the plant last week. They passed several days in the mill town. Those in the party were: James H. McGraw, Sr., president of the McGraw-Hill Company; A. J. Baldwin, vice president of the McGraw-Hill Company, and president of the Newton Falls Paper Company, and C. H. Thompson, treasurer of the McGraw-Hill Company. The officials are all from New York, and they expressed themselves as well pleased with conditions at the mill and in the town of Newton Falls, all of which are owned by the company.

Interest in Paper Stocks in Montreal

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., December 18, 1922.—Among the paper issues this week Abitibi was the leader. There was a good trading market for the stock all the time and in addition traders are beginning to put it away in anticipation of a probable dividend on towards the middle of the coming year. The reaction which has taken place in the stock for some months past has made it a popular one for in and out traders and this kind of buying has helped swell the daily transactions to a considerable extent.

By its strong action during the recent decline Abitibi further attracted much attention and set in motion about the Street many theories as to what the explanation was. The latest market reports show that it furnished trading in 4,555 shares and advanced a point to 66, which is only 2½ points below the high for the year. It is generally conceded that the company is a very low cost producer, and that with the capacity operations which have prevailed practically throughout the current year, it seems obvious that its earnings have been good. Consensus of opinion places them around 12 per cent. on the common stock.

On the strength of these assumptions, and in view of the \$5 a ton increase in the price of news print which goes into effect next month, it is believed by many that the dividend rate will be advanced. There is a psychological explanation for the recent moderate revival of interest in the paper group to be found in the near approach of the date when the new prices take effect.

Brompton has been the leader this week among the low priced paper issues. Some new interests have been more active in it recently and have been recommending it for a purchase, in view of the increased earning power the company is now sure to show during the coming year. In some quarters there is a disposition to believe the progress being made by the company will warrant the dividend on the preferred being resumed by next summer and a possible payment on the common by the end of next year or the beginning of 1924.

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WISCONSIN PAPER INDUSTRY AT MILWAUKEE EXPOSITION

Product Shown by Twenty-Six Paper Mills Attracts Interest of Thousands of Visitors From All Over the State—White Rapids Paper Co. Postpones Erection of Dam Because of Legal Complications—Wisconsin Service Co. Signs Contract to Supply Peshtigo Paper Co. With Electricity for Period of Ten Years—Pulpwood Logging Operations Started in Wisconsin and Minnesota.

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., December 19, 1922.—The paper industry in Wisconsin has done more to win the interest of the people of this state and to secure the recognition of its magnitude by its exhibits at the Wisconsin Products exposition in Milwaukee from December 14 to 21, than by any single effort since the first mill was erected in Wisconsin. Thousands of persons from all parts of the state are visiting the great exposition and nothing interests them more than the section arranged by twenty-six Wisconsin paper mills to sell the people on their greatest industry. The mills have the largest, most elaborate and most comprehensive display in the great auditorium that has ever been made. Every product of Wisconsin mills is on display, huge photographs describe the process of papermaking in great detail and a miniature machine manufactures paper all day.

Preparations for the exhibit had been under way for several months under direction of a committee which included several of the best known papermakers in the state. The exhibit is under the direct charge of G. M. Hafenbrack of the Nekoosa-Edwards Paper Co. The 26 mills co-operating in the movement are Kimberly Clark Company, Appleton Coated Paper Company, Patten Paper Company, Ltd., Riverside Fibre and Paper Company, Ontagamie Paper Company, Nekoosa-Edwards Paper Company, John Strange Paper Company, Bergstrom Paper Company, Lakview Paper Company, Rhineland Paper Company, Thilmany Pulp and Paper Company, Grandfather Falls Company, Wausau Paper Mills Company, Whiting-Plover Paper Company, Wisconsin River Paper and Pulp Company, Gilbert Paper Company, Marathon Paper Mills Company, Consolidated Water Power and Paper Company, Flambeau Paper Company, Dells Paper and Pulp Company, Wolf River Paper and Lumber Company, Combined Locks Paper Company, Marinette and Menominee Paper Company, Great Western Paper Company, Wausau Sulphate Fibre Company, Neenah Paper Company.

Wisconsin today has 59 paper mills with a daily output of 2,642 tons of paper. This state ranks fourth in the Union in the number of mills and ranks second in the number of pulp mills. It has 49 plants of that nature with a capacity of 642 tons of ground wood, 1,063 tons of sulphite fiber and 250 tons of sulphate fiber every day.

There are two well defined papermaking districts in Wisconsin, the Fox river valley and the Wisconsin river valley, but mills are scattered over other portions of the state. Twenty-four mills are in the Fox river valley, seventeen in the Wisconsin river valley and six in the Peshtigo and Menominee valleys.

Wisconsin paper mills employ normally 16,300 persons, with an annual payroll of \$29,317,000. The mills represent an invested capital of \$115,000,000, with a total output of 603,000 tons of pulp valued at \$34,000,000 and 797 tons of paper worth \$92,000,000 a year. Approximately \$16,700,000 worth of pulpwood is consumed annually by the Badger mills.

The first paper mill in Wisconsin was built in Milwaukee in 1846. It was constructed at a cost of about \$10,000, employed 10 men. Its output was two tons a week, sufficient to take care of the press of the state and leave a surplus for the Chicago market.

The first mill in the Fox river valley was built at Appleton in 1853 and the Interlake mill still is operating on the site of that old plant.

White Rapids Paper Co. Postpones Dam Construction

Because the United States waterpower commission has no jurisdiction over the Menominee river, which is the boundary between the upper peninsula of Michigan and the state of Wisconsin, the White Rapids Paper Company, organized a year or more ago, must postpone erection of a dam across the river to develop waterpower for a paper plant to be erected later. The Federal Commission notified the company that the Menominee river is not a navigable stream and therefore the United States Government has no jurisdiction over it. The paper company must secure permits from the states of Wisconsin and Michigan before it can go ahead with its plans. When this will be done is uncertain, according to Edward M. Hooper, Oshkosh, president of the company.

The waterpower site formerly was owned by Moses Hooper, E. M. Hooper and Ben Hooper of Oshkosh, and Thomas E. Orbison, well known paper mill engineer, of Appleton. A year or so ago the White Rapids Paper Company was organized and took over the property. The officers are E. M. Hooper, president; Ben Hooper, vice-president; T. E. Orbison, secretary and treasurer. When the company was organized it was stated that it had no plans for immediate development of the project.

To Supply Peshtigo Paper Co. with Electricity

The Wisconsin Service Company, a large utility operating in Eastern and Northeastern Wisconsin, has signed a ten year contract to supply the Peshtigo Paper Company, with electric power for its requirements up to a maximum load of 3,300 horsepower. The paper company now owns and operates a small hydro-electric plant at Potato Rapids, near Peshtigo, which supplies part of its need. A 66,000 volt transmission line of the utilities company passes close to the Potato Rapids plant and it is probable a large part of the energy sold to the paper company will be delivered at the company's power plant. It is said the contract provides sufficient power to not only operate the Peshtigo mills but permits a considerable expansion.

Japanese Visitors See Consolidated Paper Machine

There is a possibility that a huge paper machine, duplicate of the one now operating in the Consolidated Water Power and Paper Company, plant will be erected for a Japanese mill as a result of a visit to the Wisconsin Rapids plant by a delegation representing the Okawa mills of the Nipponese kingdom. The delegation consisted of Tetsuo Okawa, son of H. Okawa, owner of a great system of mills in Japan, M. Aria, superintendent of the Okawa mills and Mr. Aria's son. The visitors were guests of the Beloit Iron Works while in this section of the country. They have visited mills in several states and in Canada. Mr. Okawa said they have visited many mills in Europe but have not seen a machine which equals the speed of the Consolidated company's giant. Fifty-four machines are operated in the Okawa plants which employ more than 40,000 persons.

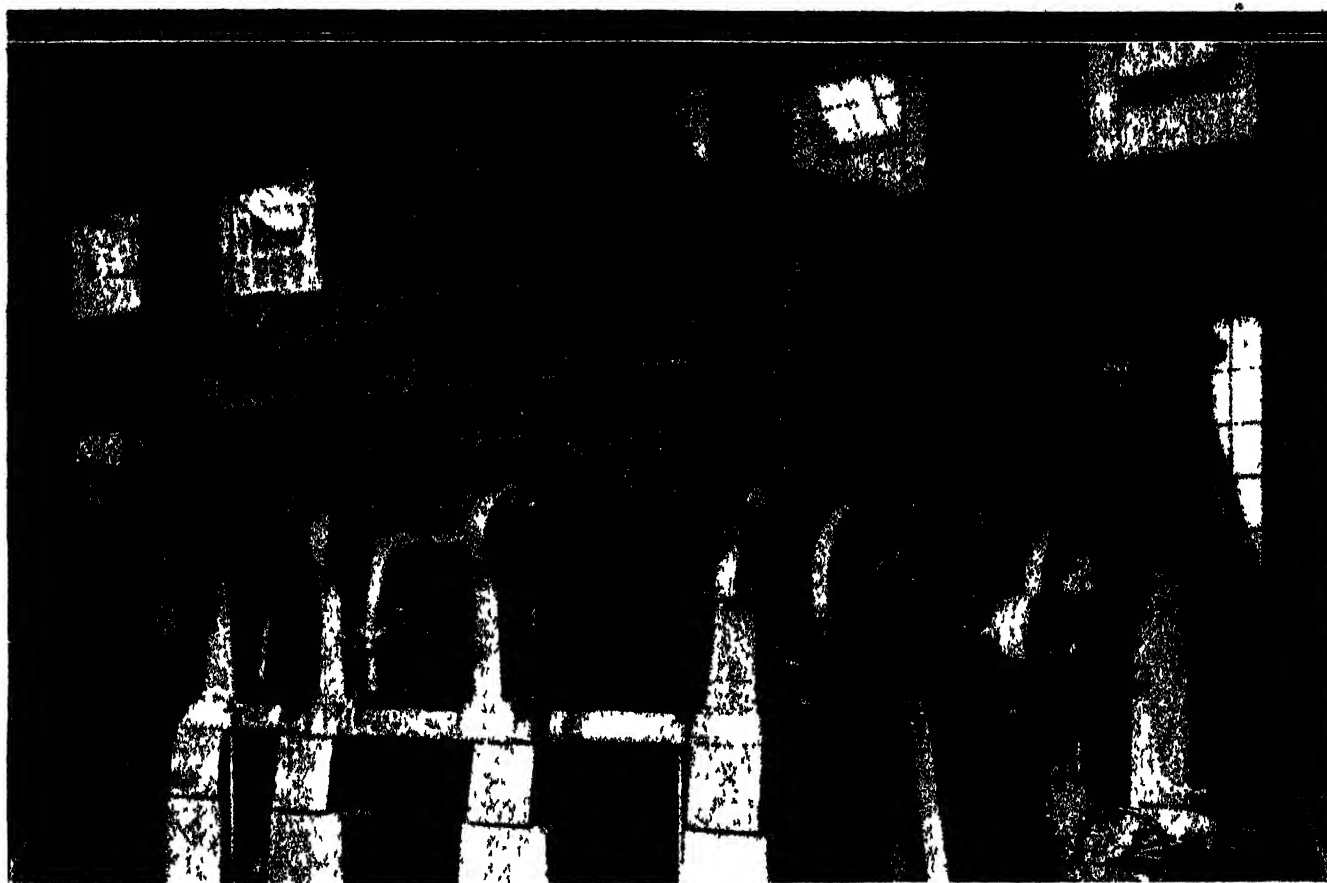
Pulpwood Logging Started

Pulpwood logging in northern Wisconsin and Minnesota has been started and the recent snowfall has given it impetus. A logger for the Marathon Paper Mills Company has already produced more than 1,000,000 feet of his contract for 3,000,000 feet.

Huge Roller Bearing for Canadian Mill

[FROM OUR REGULAR CORRESPONDENT.]

MONTREAL, Que., December 20, 1922.—The largest roller-bearing in the world is reported to be on exhibit at the Motor Show in London, England, before its shipment to Canada. It is over four feet high, weighs more than a ton, and is of the chain type, like those recently tested by the British Railways. This giant bearing, and two others like it, will be installed in a Canadian pulp mill.



and at the **GILMAN PAPER COMPANY**
GILMAN, VERMONT

3 BIRD SCREENS

**feed 65 tons of Kraft Stock to
the 164-inch machine each day.**

This Company has found that Bird Screens supply always
a continuous flow of properly screened stock, improve quality
and increase production.

12,000 TONS of paper pass through BIRD SCREENS
daily

BIRD MACHINE COMPANY
SOUTH WALPOLE, MASSACHUSETTS

Western Representative
I. H. Savory, Jr., 1718 Republic Bldg.
Chicago, Ill.

Canadian Builders of Bird Machinery
Canadian Ingersoll Rand Co., Ltd.
260 St. James Street, Montreal, Canada.

4746

BIRD ROTARY SCREENS

TORONTO PAPER MERCHANTS OPTIMISTIC REGARDING 1923

While Most Lines Are Seasonally Quiet the Outlook for the Coming Year Is Said to Be Encouraging—News Print Is in Active Request and Mills Are Said to Be Experiencing No Difficulty in Obtaining the Advance of \$5.00 Per Ton Recently Announced on New Contracts—No Truth in Proposed Rumor of Abitibi and Spanish River Merger—Other News of General Interest.

[FROM OUR REGULAR CORRESPONDENT.]

TORONTO, Ont., December 18, 1922—The busiest line in the market during the past few days has been wrapping paper as the unprecedented holiday trade has created a big demand for fiber and kraft. Other grades are experiencing a seasonal quietness. The outlook for the coming year is regarded as promising and jobbers are in an optimistic mood. News print is in active requisition and mills are entering into contracts for 1923 and are experiencing no difficulty in securing the advance of five dollars a ton on both sheet and news stock. Roll news is selling at three and three-quarter cents in car lots and, in less than car lots, at four cents, f. o. b. mill, net. Sheet news is quoted at four and a half cents in car lots; four and three-quarter cents in two tons lots and over, and at five cents in ton lots.

There has been a rumor in local circles that a merger was being contemplated between the Spanish River Pulp and Paper mills and the Abitibi Power and Paper Company. Inquiry at the head office in Toronto of the Spanish River Company elicits the information that there is no ground whatever for such a misleading report. The plants of both concerns are running to capacity, the Abitibi Company turning out five hundred tons daily and the Spanish River organization six hundred and seventy tons.

There has been a reduction of ten per cent in the cheaper grades of tag manila, while a similar decrease has taken place on sulphite bristols in order to meet the level of market quotations prevailing on the other side of the border. The pulp market is considerably quieter at present but it is expected that the demand will pick up materially after the holiday period.

Mr. Logie Retires from Eddy Co.

Benjamin Logie, who for the past nineteen years has been with the local branch of the E. B. Eddy Company of Hull, Que., and for the past few years manager in Toronto, is retiring from the service at the end of the year. Last week he was presented by the employees of the warehouse with a gold Masonic ring, suitably engraved. Arthur H. Paffard, of the firm of Armstrong & Paffard, Limited, Toronto, who has been in the wholesale grocery line for many years, succeeds Mr. Logie as manager of the Toronto branch and will enter upon his new duties on the first of January.

Price Bros. Win Law Suit

In the High Court in Toronto during the past week Price Bros. & Co., of Quebec, won an important suit against Stauntons, Limited, manufacturers of wall paper, Toronto. The action was to recover \$33,724 which was the price of seven hundred tons of roll hanging paper required to print wall paper, sold by the plaintiffs to the defendants.

Judgment was delivered for the plaintiffs for the amount claimed with interest and costs. A counter claim was dismissed with costs. A stay of ten days was granted.

The Curve of Pulpwood Demand

The Lincoln Mills, Limited, which operate pulp and paper mills at Merritton, Ont., of which E. A. Sterling is vice-president, in charge of woods operations, which are carried on principally at

Little Cascapedia, Que., report that the improved trend in the pulp and paper market should logically increase production and create a strong demand for pulpwood at higher prices. Mr. Sterling says that, according to his observations, this has not taken place to the extent which might be expected although the curve of pulpwood demand and prices has shown a definite upward trend for some time. There is considerable wood on hand at some of the mills while others have reduced their inventory to the point where it must be replenished during the winter. On the whole, the pulpwood supply at the mills seems to show a great irregularity but advices are to the effect that the totals or averages of stocks on hand are below normal.

United Paper Mills Get Out New Cabinet

There has been sent out to consumers, printers and others by the United Paper Mills, Limited, Toronto, a handsome all steel cabinet, which is sectionalized and contains every line of paper, envelopes, cards, cover papers, etc., carried by the firm. The classification is most comprehensive and in each instance the substance number is given, the sizes, finish, number, color, etc. Many of the samples are contained in special cartons and the former can be given to customers of the various firms which have the cabinets, and replacements promptly obtained from the United States Mills. Samples of stereotyping, engraving, printing, colored inks, etc., on different varieties of cover, and special papers were contributed by various firms who co-operated in the preparation of the contests. The United Paper Mills have received many congratulatory letters on this latest stroke of enterprise.

Notes and Jottings of the Industry

T. F. Patton of the J. F. Patton Company, Inc., New York, pulp and paper exporters, was in Toronto recently calling upon the trade.

A provincial charter has been granted to the Fullerton Publishing Company, Limited, Toronto, with an authorized capital stock of \$100,000, to engage in the publishing and printing business.

The many friends of H. C. Woods, manager of Warwick Bros. & Rutter, manufacturing stationers, Toronto, are extending sympathy to him in the death of his wife which took place last week following an operation.

L. C. Walker, of Vancouver, formerly sales manager of the Whalen Pulp and Paper Mill, Limited, has been appointed representative of the Forest Products Market Extension Bureau of British Columbia and is in Toronto on business.

The Elixman Paper Box Company of Canada is erecting an addition to its factory in Hamilton in order to take care of increased business.

W. H. Sherriff, of the Hodge-Sherriff Paper Company, Toronto, selling agent for the Wayagamack Pulp and Paper Company, Three Rivers, Que., has gone on a business trip to England and will visit the foreign agents of the firm.

Mr. Nicholl, formerly of London, Ont., has been appointed western Ontario representative of the Canadian Nashua Paper Company, of Peterborough, manufacturers of wax paper, gum paper and other allied allines.

T. J. Allen, vice-president of Paper Sales, Limited, Toronto, who has been ill for several weeks, is able to be at his desk again.

Rupert Huntley, son of A. Huntley, manager of the Hodge-Sherriff Paper Company, Toronto, won the gold medal at the High School of Commerce, for the general course. Last year he won the medal for accountancy.

The Strathcona Paper Company, of Strathcona, Ont., manufacturing box board, building and wrapping papers, reports that the outlook for 1923 is good and is of the opinion that prices will remain about the same as they are at present. The company intends making improvements to its heating and boiler room in order to run both machines to capacity.

Among the callers on the Toronto trade during the past week was De Forest Coutts, representing the Whiting Paper Company, of Holyoke, Mass.



NIAGARA BEATERS SAVE POWER

It isn't the **SIZE** of
the **MOTOR** that
COUNTS

It's the **POWER USED PER TON OF STOCK PRODUCED**

And the amount of power used in beating may make the difference between profit and loss. NIAGARA BEATERS require a large motor, but their greater speed and greater capacity more than make up the difference. On this page appears an actual test, the comparison between the HORSEPOWER HOURS required by a NIAGARA BEATER and Holland type engines on a given amount of stock. More information regarding the performance of NIAGARA BEATERS is yours on request. There are many reasons why this engine will lower costs for you. Find out more about it. Let us demonstrate further that the

NIAGARA BEATER SAVES POWER

Valley Iron Works Co.

Plant: Appleton, Wis.

New York Office: 350 Madison Ave.

A POWER COMPARISON

Furnish:
Ground Wood &
Bleached Sulphite
for Book Papers

Power Installed:

100 HP for 1 2000 lb Niagara Beater
150 HP for 2 2000 lb Holland Beater

Operation	2000 lb. NIAGARA			2000 lb. HOLLAND		
	Time in Hrs	Power Con in H.P.	Time in H.P.	Time in H.P.	Power Con in H.P.	Time in H.P.
Furnishing	1-4	60	15	5-12	40	17
Beating	1-5	100	20	7-12	70	41
Emptying	1-20	80	4	1-4	45	11
Total	1-2	39	1	1-4	69	

39 HP hr. used per ton
of Stock produced. 69 HP hr. used per ton
of Stock produced.

$\frac{69 - 39}{69} = 43\%$ Saving in Total Power consumption

SEASONAL SLOWING UP SEEN IN THE PHILADELPHIA MARKET

While City Business Was Less Inactive Than It Has Been, Orders from the Country District Was Rather Better Than Usual at This Time—Central Paper Bag Manufacturing Co. is Getting Located in Its New Building at 1732 North Blair St.—A. Rose & Son, Paper Stock Dealers, to Remove to New Building at 2527 E. York St.—John M. Driver Co. Expands.

[FROM OUR REGULAR CORRESPONDENT.]

PHILADELPHIA, December 19, 1922.—Spottiness continued to be the characteristic of the jobbing business on both line and wrapping papers during the week and was a source of more than usual comment, perhaps, however, only because of the larger expectations which had been formed as a result of the steady increase of business since the turn of the tide on Labor Day. As a matter of fact, while business of the week was not up to the expectations of those who simply looked forward, it quite measured up to the satisfaction of those who looked behind, because the last half of December always has been an off month among the distributors in their day by day business and the present experience is by no means an exception to the rule. However, while the trade in Philadelphia lagged behind a little, there came from the country district a volume of business considerably larger than usual at this time and this almost offset the loss locally, so that after all the volume for the week was little behind that of the preceding period. Prices remained firm on all lines of paper and are expected to continue thus. From the manufacturer's point of view as reflected by visiting salesmen, the most serious problems to be faced are not those of orders, but of raw material, particularly casein and difficulties in transportation.

There was more variety in paper stock experiences of the week than for some time past. The only quotable changes in price was an increase of 50 cents on solid ledger stock and on writing paper and a decline of 10 cents on container manilas. However, the day by day demand of the mills was of a rather contrasting character, the eager inquiry of one day being followed almost the next by complete indifference as to offerings.

Central Paper Bag Co. Moves

Removal of the Central Paper Bag Manufacturing Company to its newly purchased home, 1732-1738 North Blair street, is about completed and the firm is now installing the bag manufacturing machinery with prospects of having the plant in full operation by the first of the new year. The old home, located at 831 Ellsworth street has been disposed of. In the new quarters a large three-story property occupying four store fronts, every modern bag manufacturing device is to be installed, making the establishment one of the largest plants of its kind in this section of the country. All the equipment which was used in the Ellsworth street plant is to be installed and after the first of the year additional machinery will be added. The building, purchased by the proprietors, Harris Kardon and his son Jacob H. Kardon, has been rebuilt and modernized. The firm removed to the building at 831 Ellsworth street but a year ago after purchasing that building and previous to that time was located in the Harris-Kardon Building on Second street below Chestnut. Business increases necessitated the removal to larger quarters and the present home was acquired. The new building is near a railroad siding of the Pennsylvania Railroad and will enable the firm to speed up in the delivery of the several carloads of bags which weekly are being shipped. All the products from the bag manufactory are marketed under the Adelpia brand and consists of a general line. Recently new equipment in the

way of machinery for the manufacture of bags with automatic printing devices attached were installed in the old headquarters, Harris Kardon, head of the firm is well known in the bag and coarse paper trade, having for years been established in the large six story building recently rebuilt into a modern business home on Second street, below Walnut street, and which he still owns.

A. Rose & Son to Move to New Building

A new home has been acquired by A. Rose & Son, paper stock dealers, 2527 East York street, and removal to the new building will be made after this week. The property which was purchased consists of a two-story building at 2824 Jasper street, and which is now in a process of being remodeled and enlarged for occupancy as the main offices and garage for the fleet of twelve trucks which the firm maintains. The firm proposes to dispose of its warehouse, negotiating all sales of paper stock by direct transportation from the packers direct to the mills, thereby eliminating the accumulation of stock in storage. In addition to the garage and executive offices, a repair shop also will be provided. The firm was established many years ago and is owned by Abraham Rose and his son, Harry Rose.

Hinde & Dauch Improvements at Gloucester

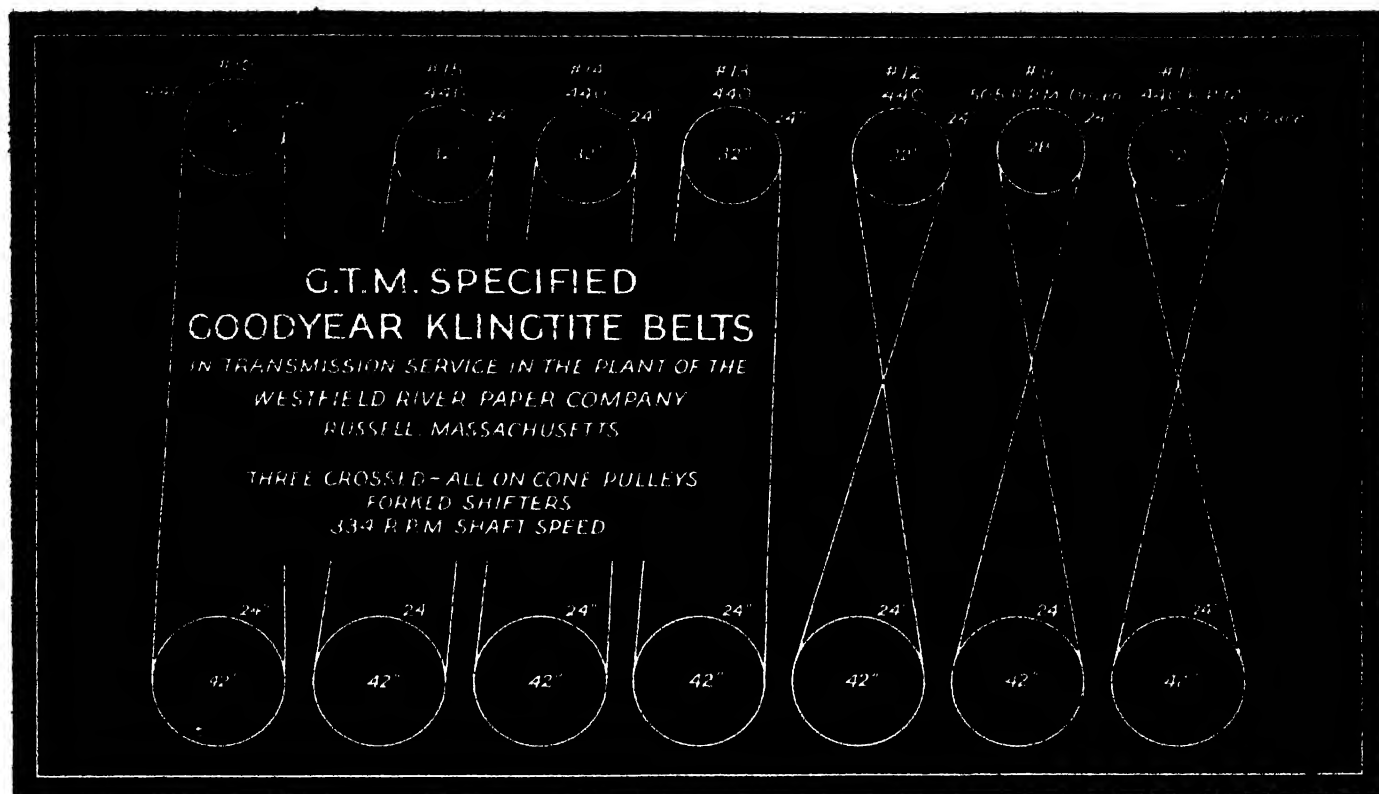
An additional wing has been erected to the paper box plant of the Hinde & Dauch Company, at Gloucester, N. J., and consists of a one-story building which covers a space of 50x120 feet, and adjoins the large building already erected. In the box plant, a line of corrugated boxes is being manufactured. On the property there is also located a paper mill with two machines engaged in the manufacture of the board used in the manufacture of the containers. Two new boilers of the Babcock & Wilcox type have been installed in the boiler room, replacing the old type. The new box department was put into operation during the month under manager, B. H. Wendt.

Enterprise Paper Co. to Celebrate

In celebration of its fourteenth anniversary and for the purpose of establishing a permanent annual gathering, the Enterprise Paper Company, Third and Callowhill streets, dealers in coarse paper and paper specialties will be the host to its force of employees and a banquet to be given in the Adelpia Hotel on December 28. A committee has been appointed by Nathan D. Isen, proprietor and host of the occasion to attend to the details of the banquet, and to provide for a vaudeville entertainment during the dinner service with a theatre party later in the evening. The committee consists of David Back and A. B. Kehr. Twenty-five members of the sales, office and shipping forces are to be guests. All are employed in the Philadelphia headquarters. While this banquet is especially designed to celebrate the fourteenth anniversary of the firm's business history, it will be the first of a series to be given annually in a get-together celebration for executive and employee.

John M. Driver Co. Expands

Further expansion in the business of the John M. Driver Company, 55th and Hunter streets, was made when the firm took over additional floor space, giving it a manufacturing capacity of 20,000 square feet. In the new space taken over, there has been installed three more bag machines and printing equipment consisting of several job presses of the Colts Armory type. The holiday season demands for the special glassine holly, printed papers has been the largest in the firm's history and is being shipped at the rate of a one and a half carloads per week. During the past year, eight bag machines have been installed, each equipped with automatic printing devices and devoted to the converting of high grade glassine specialties for confectioners, cigar manufacturers, and the box trade in plain, printed and colored effects. In line with the plans of expansion, the Driver Company now has branch offices located in New York at 27 Thames street, under the management of
(Continued on page 26)



Copyright 1922 by The Goodyear Tire & Rubber Co., Inc.

97% Goodyear-Equipped—and the G.T.M.

It is six years now since the G. T. M.—Goodyear Technical Man—made his first analysis for the Westfield River Paper Company, at Russell, Massachusetts. He has returned to the plant time and again since November, 1916, to make analyses of other drives, and each time he has found those first seven Goodyear Klingtite Belts he specified still on the job and in working trim.

That earliest problem was one of recommending the most efficient and economical belting for seven transmission drives on which three of the belts run crossed and all on cone pulleys, nearly vertical. In addition, forked shifters are used at intervals.

The G. T. M. gave expert study to the drive requirements and the working conditions. He calculated carefully all the pulley dimensions, loads, and other factors involved. He noted particularly the need for belting with exceptional friction qualities, flexible yet tight-gripping and slipless.

He recommended seven 8-inch, 6 ply Goodyear

Klingtite Belts. These belts, to quote from a letter written in July of this year by Supt. Lewis Dozier, "have given uninterrupted service, looking today as if they would run satisfactorily for some years to come. Edges of belt show no abuse from shifting."

The service these Goodyear Belts gave earned for the G. T. M. the opportunity to analyze the entire plant of the Westfield River Paper Company, and today 97% of the Company's belting is Goodyear Blue Streak or Klingtite Belts.

You can get the same intelligent service from the Goodyear Technical Man and the same economical, efficient and trouble-free operation from Goodyear Belts for your mill. These belts last longer and do better work because they are not built and bought just as so much belting, but as *the right belts* for the job, specially designed, constructed and specified to their work. For further information about the Goodyear Analysis Plan and Goodyear Mechanical Rubber Goods, write to Goodyear, Akron, Ohio, or Los Angeles, California.

Goodyear Means Good Wear

GOODYEAR

SEASONAL SLOWING UP SEEN IN PHILADELPHIA MARKET

(Continued from page 24)

Walter DeGroot. The New York headquarters will be used as a sales office and stock distributing headquarters. A Chicago office has been acquired at 4954 Kenmore avenue, under Manager J. Perlberg, formerly associated with Alex Herz Company, of New York City. The Boston branch under management of Robert Sexton, is located at 201 Devonshire street. L. E. Cummings is in charge of the San Francisco offices with headquarters at 323 Market street, and will look after the Pacific Coast trade. Several other offices have been opened in the smaller cities throughout the East.

Auer & Twitchell Co. Rebuilding

Rebuilding of the damaged portion of the plant of the Auer & Twitchell Company, 20th street and Erie avenue, which last week was visited by fire, has been started and will consist of the repairs in the enameling department where the explosion which caused the damage took place. The repaired portion of the building which was fully covered by insurance was estimated at \$6,000 and the stock of paper tubes in the plant of the Consolidated Paper Tube Company, a subsidiary of the Auer & Twitchell Company, directly adjoining the enameling room was damaged to the extent of \$5,000. Owing to the fireproof wall which separates the Consolidated plant and the enameling room, a more serious fire was averted. Owing to the large number of holiday orders on hand, the remainder of the plant, which was not destroyed by fire, was immediately put into operation.

Now the United Bag & Paper Co.

Transfer of the West Philadelphia Jobbing House, 63 North 3d street, to a new management and a change of title was made recently when I. Rubin purchased the good will and business of M. Glotstein, formerly proprietor of the Jobbing House. Under the new management the title of the firm has been changed to United Bag and Paper Company, and will engage in the business of jobbers of paper, twine, paper bags and boxes. Although the ownership has been transferred to I. Rubin, who formerly was in business in Salem, N. D., the management is left solely in the hands of M. Glotstein. The firm was established two years ago by its former proprietor. The sales force has been increased through the addition of Thomas Diamond, who will look after the Frankford and Kensington territories, and Abraham Gotlieb, who will take care of Camden.

Hawes Paper Co. in New Home

Installation by the Hawes Paper Company of manufacturing facilities in its new home at 1721-1723 North Second street, now is completed and the factory is running night and day on the line of wax papers and lunch rolls and the waxing of krafts in which it specializes. The new building consisting of a one-story structure, covering a large area was erected by the proprietor, New Hawes, and occupancy taken upon removal from the former location at 223 North 23rd street, where the firm established its business during the war days. In addition to the equipment from the old plant, several new waxing machines were added, providing for a 50 per cent. increase in productive capacity.

A Growing Paper Specialty House

The Melchoir Paper Company, organized two years ago, is seeking larger quarters for 1923.

Its "Sterling Quality Glassine," of which it shows a beautiful line of embossings, consisting of thirty different designs, as well as a wonderful variety of colors, has become very popular with the trade.

The firm is an exclusive Philadelphia representative for the McLaurin-Jones Company, with mills at Brookfield, Mass.; Ware, Mass., and Newark, N. J., and carries a large stock of sealing tapes for the convenience of the trade, incurring prompt deliveries.

The company is also featuring printed sealing tapes, making a specialty of trademark and other elaborate designs.

P. F. Melchior says, "It is astonishing, the number of purposes for which tapes can be used, particularly when you take pains in meeting the exact requirements of the customer. New uses and new fields are opening up continually."

General News of the Trade

The Charles Back Company largely has increased its stock and announces very active sales on the new Certificate Letter water marked paper made by the Crocker-McElwain Company, Holyoke, Mass., as something different in the line of an exquisite paper for the printer, engraver and lithographer and as a companion paper to the well known Certificate Bond, selling at the same price. It is stocked by the Beck Company, in 17x22, substance 20 and 24, and in 22x34, same substance.

Secretary William A. Hentz, of the D. L. Ward Company, from mid week until the end of last week, conducted a party of the firm's customers on an inspection trip of the Cumberland mill of the S. D. Warren Paper Company. H. J. Brandt of the Ward Company accompanied him. Others in the party were Clayton Stolz of the Niles Press, Robert Hesse of the Frank D. Jacobs Company, Wesley Gibson, of New York; B. F. Emery of Emery & Son, H. C. Buche, of Honey Brook, Pa., and E. M. Jenkins of the Leader Press.

Samuel S. Alcorn, who for half a decade has been established in the paper brokerage business and whose recent headquarters were located in room 200, Victory Building, 1001 Chestnut street, has removed to larger and more attractive offices on the fifth floor of the Victory Floor, having taken the suite No. 509, from which he will conduct his business in the general line of coarse and fine papers.

There recently was installed a waxing department in the Keystone Paper Mills at Upper Darby, for the purpose of waxing the line of Krafts and Manilas manufactured by the Keystone mills. The waxing department is a new departure for the firm's business. Heretofore the firm engaged exclusively in the making of Krafts and Manila.

Vice-President and General Manager Morgan H. Thomas, of the Garrett-Buchanan Company is confined to his home suffering from tonsillitis. Credit Manager Winfred Predmore, of Riegel & Company is building a new home for himself at Collingswood, N. J.

A well defined rumor is in circulation that capital in a considerable amount is being gathered together in this city for a rather novel undertaking. The reclamation of the cotton and linen fabric of used automobile tires for the manufacture of a high grade of paper and of course the recovery of the rubber incidentally. It is understood that a large plant close to Philadelphia is shortly to be equipped for the purposes of carrying out this proposition.

Due to the recent installation of electric drives throughout the plant of the Edwin T. Garrett Company, of Lansdowne, known for more than half a century as the "Darby Paper Mills," production has been increased about 40 per cent. The high grade tissues produced by this mill have an enviable reputation and the capable conduct of the company's affairs by Harvey Garrett, son of the founder Edwin T. Garrett, has brought about a steady healthy development of the business of this mill, so that it now occupies foremost rank in its class of high grade wrapping tissue products.

Edwin Garrett and son, of Chester, proprietors of the paper mill at Granogue, Del., which was founded almost a hundred years ago and operated for many years by Francis Tempest, have just completed a new concrete dam and other extensive improvements, including the installation of new beaters, etc., so that they are now equipped to produce Rope Manila Tissue of unique merit.



Next Monday

MERRY XMAS



MERRY Christmas and a hearty,
old-fashioned Happy New Year.
Our sincerest good wishes for
your success and prosperity
throughout 1923 and all the years to
come.

James Lawrence, President

The Lawrence Bag Company
Miamisburg, Ohio

LAWRENCE
GROCERS' BAGS

STANDARD BASIS OF COLLECTING CONVERSION COSTS

By J. J. BURKE, SECRETARY-TREASURER OF THE COST ASSOCIATION OF THE PAPER INDUSTRY

J. J. Burke, secretary-treasurer of the Cost Association of the Paper Industry, has prepared the following memorandum regarding the plan suggested by the cost association for the collection of conversion costs in a standard basis:

What Is Meant by Conversion Costs

By conversion costs is meant costs relating to the actual converting of the raw materials into the finished products exclusive of the cost of these raw materials which it is suggested should be included at a fixed cost. The mere use of the word "fixed" is liable to lead to misconception but it should be understood that our reason for not wishing to have the raw materials put in at cost is that we are not at this time endeavoring to improve the purchasing ability of the different mills. Our sole object, on the contrary, is to assist them in improving their manufacturing efficiency. Hence our reason for suggesting that all raw materials (and by raw materials is meant those fibrous materials which are actually used in the making of the paper) shall be included at the same price by all the mills submitting these costs to the Association.

In order that conversion costs may be collected on a basis which will permit the Association to make proper comparisons it is necessary of course that the mills estimate on the same quantity of the same paper. In view of the fact that so many mills have slight differences in the grade weight etc. of their products our problem has been to find some basis which would be acceptable to the different group.

Public Printer's Specifications Suggested

Mr. Reilly's suggestion is that we shall for this purpose use the specifications cited in the proposals for furnishing paper for the Public Printing and Binding as drawn up by the Joint Committee on Printing, appointed by the U. S. Government. It is of course, not at all necessary that we should use these specifications but inasmuch as they are very definite and complete they certainly furnish a very satisfactory basis in those cases where the kind of paper specified is one which could be very generally manufactured by any one group of manufacturers in the industry.

"At the conclusion of our meeting on this subject in Holyoke I was instructed to draw up in collaboration with the secretaries of the various trade associations affiliated with the American Paper and Pulp Association specifications which would furnish a standard basis for the collection of these conversion costs and would at the same time interest the largest possible number of mills in the group. If the secretaries of any of the affiliated associations find that there are not any specifications given in the Committee's proposal which would be of general interest to their group of mills they are quite at liberty to suggest specifications and the quantity which they would recommend should be used for the purpose stated. The quantity and specifications however should be as carefully stated as in the Government proposals.

'The Cost Association would be glad to have counsel's opinion as to whether there is any objection to the listing of these conversion costs when collected under key numbers thereby permitting those mills submitting their costs to know the names of each mill on the list. Since this is the method which has been used by the News Print Service Bureau for some years past, we believe it is quite legal their counsel having passed favorably on the procedure.

Price Fixing Avoided

In conclusion it cannot be emphasized too strongly that it will be absolutely impossible for any of the mills to make use of these conversion costs for the purpose of fixing prices because, firstly, the differences between the costs of raw materials will not be

shown secondly selling and distributing expenses will not be shown and thirdly percentage of profit will not be shown.

As stated before the figures collected will relate solely to the cost of converting the raw materials into the finished product for mill and comparisons will be made as between mills, in order to enable them to ascertain whether their costs are high, and thus assist them in their efforts to improve their manufacturing efficiency.

Belt Conveyors and Belt Elevators

The new book of the above title written by Frederic V. Hietzel, Member of the American Society of Mechanical Engineers and the Franklin Institute of Pennsylvania and published by John Wiley & Sons, Inc. of New York was compiled especially for four classes of people:

1 Men who have material to handle and who want to know more of the "how" and "why" of conveying and elevating machinery than can be told in the catalogs and advertisements of manufacturers.

2—Consulting engineers who have to advise in the selection of the proper machinery to do certain work.

3 Engineers and draftsmen who design conveying and elevating machinery.

4 Students in technical schools and colleges.

The author's treatment of the subject is clear, thorough and practical explaining principles and the reasons for doing things, is the result of 30 years' experience at the drafting board in the shop and in the field supervising the erection and operation of conveying and elevating machinery.

This volume consists of 333 pages interspersed with 291 illustrations and is bound in cloth. The price is \$5.00, post paid.

Mr. Backus Enters Libel Suit

F. W. Backus of the Fort Frances Pulp and Paper Company, Fort Frances, Ont. is the plaintiff in a libel suit for \$100,000 damages against the publishers of the *Toronto Telegram* in connection with the granting of the English river pulp wood concession to Mr. Backus by the Ontario Government last year. The case has been going on for several days. Among the witnesses called was L. H. Anson of Montreal, president of the Abitibi Power and Paper Company. He said that his company had not tendered on the English river limit because it had not enough wood for his purpose on the occasion of the sale to Mr. Backus. In 1915 the company of Mr. Anson had bid on the English river limit but the bid had been refused. A cruise preceded the tender. The purpose of the Abitibi company had been to establish a western pulp and paper mill. Mr. Anson added that for the development contemplated by him, the mills were to be located on the English river and a railway, fifty miles long which would have to be built to get the material in and the products out. Insufficiency of wood and consequent inability to put up the size of mill required had alone prevented him from tendering on the last occasion.

J. H. Eilers Goes With Uncas Paper Board Co.

NORWICH, Conn., December 19, 1922.—J. H. Eilers, mill manager of the New Haven Pulp and Board Company, New Haven, has resigned that position to accept a similar one with the Uncas Paper Board Company. This is the plant of the Ironsides Board Corporation which was bought several weeks ago by J. E. Smith when the affairs of that concern were wound up.

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The Fact Is

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TWO-ROLL BEATER*

The beating engine covered by this patent consists of two troughs separated from each other by the backfalls back of the rolls D and D' , equipped with suitable devices (or lighter-bars) for raising or lowering the rolls. The roll shafts are placed at right angles to the direction in which they are placed in the ordinary beaters.

The rolls are placed in the ends of the trough instead of in the straight portion as is usually done, this arrangement having the

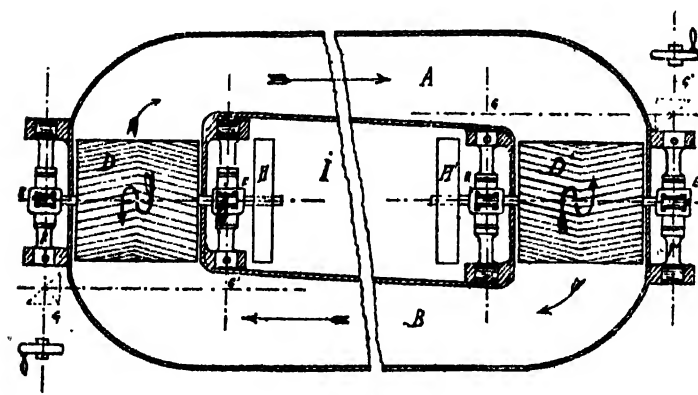


FIG. 1.

advantage of preventing the stopping or slowing down of the stock when it comes to the curved portion of the trough.

Behind the backfall the trough gradually widens until it comes to the next roll. As the stock circulates in the trough the section of the trough increases causing the height of the stock to decrease and consequently its speed to increase until it reaches the roll which takes it up and throws it over the backfall when the same thing happens again.

With this type of beater the consistency of the stock can be considerably increased, and owing to the high velocity with which the stock is circulated the output is greatly increased without sacrificing the quality of the work.

The operation is quite easy, as the beater is readily accessible from all sides, and quite safe as the driving pulleys are placed in

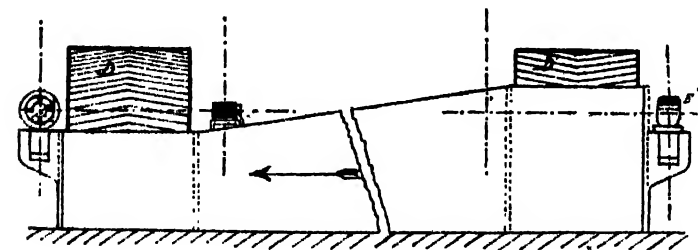


FIG. 2.

the space left between the troughs. It can be very quickly furnished and dumped, as these operations are carried on simultaneously on both sides and are therefore twice as rapid as in an ordinary beater.

Talc and Soapstone in Canada

A report just published by the Mines Branch, Department of Mines, under the above title, deals with the talc and soapstone resources of Canada. The author is Hugh S. Spence, and the report comprises 80 pages of text, 17 illustrations and a map showing

*French patent No. 514,865, delivered to J. E. Brodeur, Nov. 19, 1920. Translated from *Le Peuplier* xxiv, No. 5, p. 211, May, 1921, by A. Fagnano-Couture.

the distribution of the known talc and soapstone occurrences in the Eastern Townships of Quebec.

The report contains four chapters: Chapter 1 including tables of analyses of talcs and soapstones, notes on the distribution of the Canadian deposits, and a statistical section. Chapter 2 is devoted to detailed descriptions of Canadian talc and soapstone mines and occurrences; while Chapter 3 deals with the uses, mining and preparation for the market of talc and soapstone. Chapter 4 contains

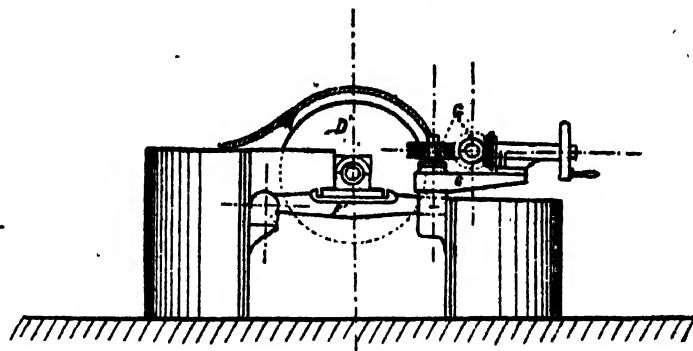


FIG. 3.

brief notes on talc in foreign countries. A bibliography of the more important literature dealing with talc and soapstone is appended.

From this report, it appears that while talc is known to occur in Nova Scotia, Quebec, British Columbia and Ontario, the last named province is the only one that has figured at all prominently as a producer.

The Nova Scotia occurrences are small and are not regarded as of economic importance. Quebec undoubtedly possesses important talc deposits, most of them yielding an off-color grade of ground talc, which, however, has good slip and should be of value for the paper, roofing and foundry trades. A similar grade of talc

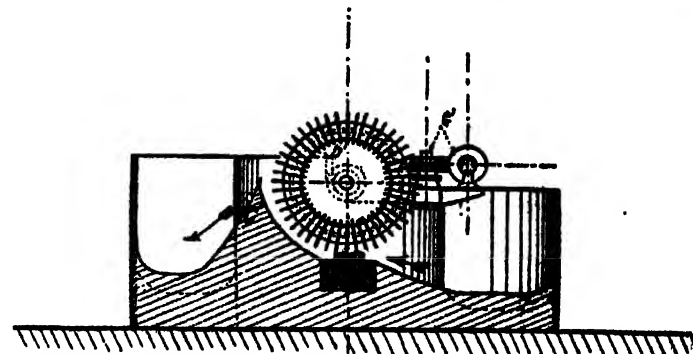


FIG. 4.

is produced at several localities in British Columbia; and there is, also, in this province a deposit of cream colored steatite, or massive talc, that shows some promise, and that may, with the improved transportation facilities afforded by the Castle-Windermere highway, prove capable of development.

The principal talc mines of the Dominion lie in the vicinity of Madoc, north of Belleville, in Hastings County, Ontario. The Gillespie mill at Madoc station has been in operation for the past sixteen years, and produces a superfine, white talc that is much in demand by the talcum powder, textile, paper and soap trades.

According to the statistics of production given the production of talc in Canada in 1920 amounted to 21,000 tons, valued at \$167,000, virtually the whole of this quantity was derived from the Madoc area, Ontario.

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"CO-OPERATION AND COSTS"

By C. A. JASPERSON, PRES., COST ASSOCIATION OF THE PAPER INDUSTRY

C. A. Jasperson, secretary of the Nekoosa Edwards Paper Company of Port Edwards, Wis., newly elected president of the Cost Association of the Paper Industry, gives his inaugural message to the cost men of the industry in the current month's issue of *The Paper and Pulp Industry*, the bulletin of the American Paper and Pulp Association, to its members. His message is given as follows:

As the incoming president of the Cost Association of the Paper Industry, I wish to direct my first message primarily to the chief executive or manager, and try to impress upon him the importance of becoming a member of this association, if he is not already a member, why his membership is necessary and what we hope to accomplish.

Should Use the Broad Viewpoint

The question has often been asked, "What do I get out of the association?" When an executive asks this question, I cannot help but feel he is looking at this important association work from a narrow viewpoint, either he does not understand or does not sense the ultimate results which are sure to be accomplished.

For the past twenty years the company with which I am connected has been interested in getting a system perfected which would not only show the total cost to make the various kinds of paper, but the cost per ton of each kind of paper made. I have spent a great deal of time and money visiting other mills, comparing systems affecting costs. Because the mills I visited had cost systems, I was under the impression most mills were more or less informed as to their costs.

Four or five years ago I became interested in cost association work and soon learned I was mistaken in assuming all mills had at least the semblance of a cost system. When I found how small a number of the mills had an idea of what it cost them to make a particular kind of paper as it ran over their machines, I determined to give what time I could toward helping mills know their costs.

American Manufacturer Is Good Loser

I believe the American manufacturer is what we term a good loser. When bids are asked on a particular kind of paper and a manufacturer secures the order, his competitors take it for granted he has taken the order on a basis which will net him a reasonable profit. They can do nothing but sing his praises and assume he has secured the business on a legitimate cost basis. However, when it is later learned he had no idea of what it was going to cost to make that paper and he had taken the business on the assumption, "If the other fellow can make it for that, so can I," then it is that the "Milk of human kindness sours within our bosom." It is the purpose of the Cost Association to do what it can to teach the uninformed how to arrive at true costs and bid intelligently.

Why Cost Work Should Be Supported

We have members in our association who have good cost systems and because they feel that cost association work does not particularly interest them, think very little can be gained by sending representatives to attend conventions. Such mills are to be congratulated in having accountants who can perfect satisfactory cost systems. However, I wish to urge upon these mills the necessity for their continued support in the Cost Association work; the manufacturer who does not know his costs needs a campaign of education, as he is a constant source of annoyance because of the quotations he makes. We need the intelligence co-operation of every person engaged in this highly important work. The enthusiasm and interest in cost work and its direct bearing on the efficiency and prosperity of the paper industry as a whole, can best be obtained through such an organization as is now functioning. I am asking

the aid of those leaders in cost work to attend our conventions, that we may all learn from one another.

Support Needed from Mills

I cannot put too much stress on the importance of getting support from the mill with a cost system, and the mill without a cost system, as it is only with proper financial backing that our organization will be able to send out accountants in an advisory capacity to give such help as is necessary to get mills lined up with good cost systems. This should prove constructive, as it will have a tendency to eliminate destructive quotations. Unintelligent bidding is apt to be disastrous for mills that are not equipped with good cost systems.

The president and the executive committee of this association without expectation of reward are giving their time and money toward developing this most important phase of the paper industry. The ultimate goal is to teach true costs, thus eliminating unintelligent competition.

Cost Work on a Higher Plane

We are coming to realize that this program cannot be accomplished in a year or two, hence we need the continued support of all the mills in the paper industry. My personal plea is that we place the cost work on a higher plane than it has ever been before; to do this we must retain the mills that are now members and we need to urge the real advantages of our association upon those mills that are not now affiliated with us.

Sulphate Mill Bi-Products

B. T. MCBAIN, DIRECTOR OF MFG., NEKOOSA-EDWARDS PAPER CO.

Waste to be used! Where a ton of pulp is made, almost two tons of waste results in the sulphate pulp business, when gross weight of wood and sludge waste are considered as against net weight of pulp produced.

Five sulphate mill operator of the States of Minnesota and Wisconsin have formed an association for research work to the end that all valuable material in what is now waste from their plants be reclaimed in the form of bi-products and markets found for same.

Arrangements have about been completed with one of the foremost chemical engineers of the United States to superintend this research work, and while no definite plan has yet been outlined, suffice it to say that the men behind the idea are among the leading paper and pulp manufacturers of the States named, and if it is in the cards, the game will be won. This is another place where co-operation between the technical man and the practical man can do much for the paper and pulp industry as a whole.

There are many chemicals known to be possible of saving, yet to put it as one chemical engineer spoke his mind, "I think sulphate pulp just happened. I don't think anyone ever worked it out scientifically."

I believe there is much to be learned, and believe there are greater possibilities in the bi-products than in the pulp itself, like in the bi-products of the packing industry."

This is another move to save waste. When all the waste in the industry is saved, or arrangements to that end perfected, I will start harping on another tune.

The mills so far interested are: Minnesota and Ontario Paper Company, International Falls, Minn.; Marinette and Menominee Paper Company, Oconto Falls, Wis.; Wausau Sulphate Fiber Co., Mosinee, Wis.; John Strange Paper Company, McDill, Wis.; Nekoosa-Edwards Paper Company, Nekoosa, Wis.



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to choose from the best and
who buy the best, have set
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BELOIT IRON WORKS

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Recent Incorporations

NATIONAL CONSUMERS PAPER CORPORATION, Manhattan, New York. Manufacture paper. Capital, \$200,000. Incorporator: H. Kushel, 7020 Bay Parkway, Brooklyn.

NEWMAN-KOHN PAPER COMPANY, New Jersey, capital \$100,000. To manufacture paper bags and handle paper. Incorporators: Albert Newman, Leon A. Kohn, Sylvan H. Kohn.

L. E. STEWART & Co., Albany, New York. Make paper. Capital, \$10,000. Incorporators: L. E. and L. M. Stewart, R. C. Postanzer. Attorneys, Muhlfelder & Ilch, Albany, N. Y.

ADHESIVE PAPER PRODUCTS CORPORATION, San Francisco, California. Capital, \$100,000.

FRIEDMAN PAPER COMPANY, Manhattan, New York. Capital, \$30,000. Incorporators: B. and L. and S. Friedman. Attorneys, Speiser & Speiser, 170 Broadway.

TRANSO ENVELOPE COMPANY, Wilmington, Delaware, manufacture. Capital, \$500,000. Corporation Trust Company of America.

KEYS MANUFACTURING COMPANY, Manhattan, New York. Lumber and pulp. Capital, \$100,000. Incorporators: A. V. Fox, J. Nevin, Jr., M. C. Nicolson. Attorneys, Griggs, Baldwin & Baldwin, 27 Pine street, New York.

TANENBAUM STATIONERY, Manhattan, New York. Capital, \$20,000. Incorporators: J. Tanenbaum, W. Roseman, B. Kalvinsky. Attorney, A. Rosenthal, 1476 Broadway.

U. S. TAPE-O-GRAPH SAFES COMPANY OF NEW YORK, Manhattan, New York. Make paper wrapping machines. Capital, \$10,000. Incorporators: N. and M. Schapiro, R. Decker. Attorney, B. S. Deutsch, 261 Broadway.

AMERICAN CORE-TWINE CORPORATION, Boston, Massachusetts; paper and twine. Capital, \$15,000. Incorporators: Roger P. Tobey and George W. Peck of Boston and Emily M. Bresnan of Malden.

FORT LILL PAPER PRODUCTS CORPORATION, Manhattan, New York. Capital, \$25,000. Incorporators: P. Pesetzky, W. Moloshok, T. Galante. Attorney, B. Bernstein, 299 Broadway.

ALGONQUIN PAPER CORPORATION, Ogdensburg, New York, 5,000 shares preferred stock, \$100 each; 15,000 common, no par value active capital, \$575,000. Incorporators: G. M. McKee, F. A. Augsbury, E. L. Strong. Attorney, E. Fitzgerald, Ogdensburg.

CARPENTERS STATIONERY STORES, Wilmington, Delaware. Stationery. Capital, \$1,000,000. Corporation Trust Company of America.

Against Wage Increase in Holyoke

HOLYOKE, Mass., December 18, 1922.—The Allied Paper Trades Council met last week and received from Adam Wilkinson in behalf of the paper manufacturers a statement relative to the increase in wages asked by the union. The statement was to the effect that, owing to the business conditions, they could not at this time grant an increase in wages. The several trades represented at the conference, were inclined to favor an attempt to have another conference. The council as a whole did not take any action, but left it to a committee to take whatever action was thought advisable. By-laws were adopted and arrangements made for the semi-annual election to be held the 31st.

Eagle lodge of papermakers expressed their dissatisfaction with the refusal of the manufacturers to grant the increase in wages, by voting to instruct their delegates to the Allied Paper Trades Council to demand that the manufacturers grant another conference on the wage situation.

These officers were elected: President, George Astley; vice-president, Lawrence Kirley; financial secretary, George Welch; recording secretary, Thomas Dowd; treasurer, Michael McLean; grievance committee, George Astley, Lawrence Kirley, George Welch, Albert F. Norris and George Stalker.

Obituary

Alexander Buntin

TORONTO, Ont., December 18, 1922.—Alexander Buntin passed away at his home on Elm avenue, on Monday of last week in his fifty-eighth year as a result of a stroke, which befell him on Friday last. He was one of the most widely known paper jobbers in Canada and was head of the Buntin, Reid Company.

The late Mr. Buntin was born in Montreal and spent several years in the mercantile marine service. He then learned the art of paper making and was at one time proprietor of the Valleyfield paper Mills at Valleyfield, Que. He succeeded his father as manager of the Buntin Reid Company, Toronto, in 1893, and a year later became sole proprietor of the business. The firm specializes in book, writing and ledger papers and has extensive connections. The death of Mr. Buntin has cast a deep gloom over the paper industry for he was a man as strong and unflinching as the oaken decks on which he spent the early days of his manhood.

Heavy Demand for Wrapping in Chicago

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, Dec 18, 1922.—The one shining light of the present paper market in the Chicago territory is the day to day urgent demand from the holiday trade for wrapping papers, small paper boxes and other coarse papers. Retail stores in Chicago report a tremendous pre-Christmas business with records broken each day. It is anticipated that Christmas purchases this year will exceed every record heretofore made in Chicago territory. The stores in anticipation of their usual business placed their orders for wrapping paper early, but had no idea that the buying power of the public was as great as it seems to be. Consequently, they under-estimated their wrapping paper requirements and are now buying for present use. The market in fine papers and ledgers is a little brighter, large buyers having entered the market in the last ten days. A few large orders have been placed and it is believed that shortly after the first of the year this branch of the industry will be enjoying a healthy business.

Book papers remain quiet. Printers and other buyers are not in the market except for their immediate needs. Many of them will commence taking inventory next week and paper manufacturers and wholesalers do not anticipate orders of any consequence from this source until after the holiday season.

Coated papers are moving a little more freely as a result of the publicity given to the fact that the visible supply of casein is practically exhausted.

Lacey Engineering Parties in South

Two forest engineering parties from the New York office of James D. Lacey & Co., have recently started important field work in the South. One party of twenty men is making an intensive forest survey of 127 square miles in Louisiana in advance of proposed manufacturing operations for which the timber estimates and type map will be the basis. S. J. Hall is spending the week of December 10, with the Louisiana party.

Another party is making a careful cruise of a smaller tract in South Carolina in connection with the acquirement of stumpage for an existing mill operation. Several preliminary examinations have also been made recently along the Atlantic seaboard and a reconnaissance of pulpwood resources in the central gulf region was completed a short time ago.

In addition to the actual and prospective improvement in business conditions reported practically throughout the South, there is a rapidly growing recognition of the re-growth possibilities on cut-over lands, and the future timber supplies of several companies are likely to be grown as crops under careful forest management.

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Trade Marks Department

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The following are trade mark applications pertinent to paper and pulp filed pending in the United States Patent Office which have been passed for publication and are in the line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister building, Washington, D. C., or Bush building, 130 West Forty-second street, New York, trade-mark specialists.

As an additional service feature to its readers, the PAPER TRADE JOURNAL gladly offers to them an advance search free of charge, on any mark they may contemplate adopting or registering.

SANJEEP No 170,254 Nashua Gummed and Coated Paper Company, Nashua, N. H. For paper wrappers for fruit.

WHITE DUCK No 170,140. Inlander-Stemmler Paper Company, Chicago. For wrapping paper.

VELVET—No. 168,700. White-Washburne Company, Inc., Hinsdale, N. H. For toilet paper, paper napkins and paper towels.

10-TO-1—No 166,709. Oswego River Paper Mills, Phoenix, N. Y. For toilet papers.

WALL PAPER, The Finishing Touch; on picture of piece of wall paper. No 162,449. Martin Rosenberger, Cincinnati, Ohio. For wall paper.

CORISCAN—No 169,222. The Paper Mills' Company, Chicago. For book paper, printing paper, bristol board, and post card bristol board.

KARA No 170,568. Eaton, Crane & Pike Company, Pittsfield, Mass. For writing paper, envelopes, etc.

THE WARREN MANUFACTURING COMPANY and picture. No. 159,672. The Warren Manufacturing Company, N. Y. C. For jute tag paper, envelope paper, bristol board, cover paper, etc.

INDIAN—No 168,310. Hampton Roads Paper Company, Norfolk, Va. For wrapping paper.

INDIAN HEAD PICTURE No 170,005. The Chillicothe Paper Company, Chillicothe, Ohio. For writing paper, bond.

ST. MAURICE—No 164,723. St. Maurice Paper Company, Limited, Montreal, Quebec, Canada. For news print paper.

A F C O, Rochester, N. Y.—No. 168,664. Alderman, Fairchild Company, Rochester, N. Y. For paper and pasteboard boxes.

Canadian Embargo Handicaps U. S. Production

WASHINGTON, D. C., December 19, 1922.—The embargo declared by the Canadian Government on pulpwood exports from crown lands is likely to be extended to all forest lands in the Dominion, says Chief Forester William B. Greeley in the annual report of the Forest Service, United States Department of Agriculture, just issued.

Should this be done, he adds, raw wood from Canada will be completely shut off as a source of supply for the paper industry of the United States. The paper mills of this country now draw one-third of their requirements from Canada and Northeastern mills have already been seriously handicapped by the present embargo.

This illustrates, the report continues, the hazard of becoming dependent upon foreign supplies. The rapid increase in lumber shipments through the Panama Canal foreshadows the time, in the near future, when the principal source of softwood lumber for the entire nation will have shifted to the West coast and the average freight cost paid by the home builder or manufacturer will have advanced to a new and higher level.

When the coniferous virgin timber of the far West is exhausted in its turn, if the principal source of supply shifts to Siberia or South America, the transportation conditions which control the present lumber market will become different only in degree. Further, as the sources of supply become more restricted and opportunities for competition are lessened; and temporary shortage due to bad seasons, labor troubles, or congestion of transportation facilities are more probable and more severe. Thus the condi-

tions of the trade become more favorable to monopolistic control, to violent market fluctuations, and to high prices. And we are dealing with a basic raw material, as widely used and as necessary to national existence as coal.

Scandinavian Paper Markets

Reports from the Swedish paper market tend to show that the situation is improving. This is especially true of the news print and kraft paper mills, which have work insuring operation well into the new year, according to advices to the Department of Commerce from Assistant Trade Commissioner H. Sorenson.

There has been a noticeable slump in the sales of sulphite pulp of late. America remains the principal purchaser of pulp, and it is announced that shipments to the United States so far this year have reached a figure of 25,000 tons for bleached and 200,000 tons for unbleached sulphite pulp.

The long-expected improvement in the mechanical-pulp sales has finally manifested itself, and 65 crowns (about \$17.50) per ton, f.o.b., for wet pulp has been obtained for available lots for shipment before the closing of the shipping season in the Gulf of Bothnia.

With the exception of kraft, the paper market in Norway is at present quite dull, Consul General A. G. Snyder reports. Kraft paper has been purchased by the United States and Great Britain in considerable quantities lately. Great Britain has for the time being taken a reserved attitude in regard to purchases of paper. Competition from Germany and Finland continues to be felt, especially in the South American markets, where prices have been forced to unreasonably low figures.

With the exception of Japan, the Far East has recently purchased large quantities of thin printing paper and M. G. cap. The fact that Japan assumes an independent position with respect to Norwegian paper is due doubtless to increased domestic production and possibly to low freight rates secured on the Pacific by Norway's competitors.

Arthur Baker of Empire Mills in New York

Arthur Baker, of the Empire Paper Mills, Ltd., Kent, England, well known manufacturers of news print, who has been visiting some of the representative paper and pulp mills in this country and Canada, together with a few invited guests in the paper industry, were entertained at luncheon Friday of last week at the Canadian Club by W. G. MacNaughton, secretary of the Technical Association of the Pulp and Paper Industry. Mr. Baker who is a former president of the Technical Section of the Paper Makers Association of Great Britain and Ireland, and naturally a keen observer here of anything new in the manufacture of paper and pulp, expressed himself as having been greatly impressed with the efficiency of the newer Canadian mills. Among other matters he expressed himself as having been especially interested in the generation of steam by the direct application of electricity to water, the use of pulp direct from the grinder to the paper machine and the operation of Fourdriniers at the rate of about 1,000 feet per minute. The average rate in England being only about 650 feet per minute.

Friday afternoon Mr. Baker visited the news print plant of the Tidewater Paper Mills Sales Corporation, Brooklyn, as the guest of Arthur F. Allen, manager of manufacturing.

J. & J. Rogers Co. Power Plant Burned

AUSABLE FORKS, N. Y., December 18, 1922.—The power plant of J. & J. Rogers Company, manufacturers of bleached manila and sulphite papers and bleached and unbleached sulphite pulp, was destroyed by fire Friday, December 8.

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GLASSINE PAPERS

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RUSSELL, MASS.

Government Bids and Awards for Paper

[FROM OUR REGULAR CORRESPONDENT.]

WASHINGTON, D. C., Dec. 20, 1922.—The purchasing officer of the Government Printing Office has received the following bids:

750 lbs. 17 x 22 10, white French folio paper: Mathers-Lamm Paper Company, \$1.25 per lb.; Dobler & Mudge, \$1.35; The Whitaker Paper Company, \$1.25; J. E. Linde Paper Company, \$.16, and R. P. Andrews Paper Co., \$.13.

3,900 lbs. 22 x 34—26 No. 13 green high M. F. writing paper: R. P. Andrews Paper Company, at \$.129 per lb.; Dobler & Mudge, \$.21, and Old Dominion Paper Company, \$1.049.

12,000 lbs. 25 x 38—35 M. F. printing paper in 48-in. rolls: Bryant Paper Company, \$.0719 per lb.; Old Dominion Paper Company, \$.07189; The Champion Fibre Company, \$.0775.

50,000 lbs. 25 x 30—No. 2 binder's board: Ingalls & Co., \$68.00 per ton; C. B. Hewitt & Bros., Inc., \$67.50; R. P. Andrews Paper Company, \$71.00; Dobler & Mudge, \$74.00; Mathers-Lamm Paper Company, \$84.90; Republic Bag and Paper Company, \$73.00; The Whitaker Paper Company, \$69.00; Denison Pratt Paper Company, \$68.00; Kerr Paper Mill Company, \$80.00; Wilkinson Bros. & Co., \$72.50.

17,500 lbs. 20½ x 29 white antique printing paper; R. P. Andrews Paper Company, \$14 per lb.; Mathers-Lamm Paper Company, \$1.468, The Whitaker Paper Company, \$1.343.

The purchasing officer of the Government Printing Office will open bids on December 26 for 2,000,000 lbs. of U. S. postal card cream bristol board, in 44½-in. rolls.

The purchasing officer of the Government Printing Office will open bids on December 26 for 2,637 pounds (approximately 75 reams) of safety writing paper, M. F.

The Bureau of Supplies and Accounts, Navy Department, will open bids on January 9 for 35,000 rolls of toilet paper.

The Bryant Paper Company has been awarded the contract by the purchasing officer of the Government Printing Office for furnishing 400,000 lbs. of white M. F. printing paper in 38-in. rolls, at \$.0694 per lb.

The Old Dominion Paper Company will furnish 36,000 lbs. of No. 13, high M. F. white writing paper in 21-in. rolls, at \$.0839 per lb., and the R. P. Andrews Paper Company will furnish 4,375 lbs. of 21 x 32½—87½ No. 28, salmon commercial ledger paper at 19 cents per lb. and also 4,000 lbs. of 21 x 32½—109½ lbs. commercial ledger paper at 19 cents per lb.

Waste Merchants Association Meets

The annual meeting of the Waste Merchants' Association, of New York, was held at Andre's Restaurant on Wednesday evening, December 13.

The following officers were elected for the ensuing year: President, A. J. Moran, of E. B. Thomas & Co.; Vice-President, Walter Clark, of Maurice O'Mara Company; Secretary, F. H. Chase, of Chase & Norton; Treasurer, Walter Hicks, of D. I. Hicks, Inc.

The executive board for the ensuing year will consist of: Louis F. Domstadt, Domstadt Scott & Courtney; George Carrizzo, George Carrizzo & Co.; Harry Rosenberg, American Wood Pulp Corporation; D. Palmieri, Box Board & Lining Company; A. Constarino, Hicks, Constarino & Co.

The annual banquet of the Association will be held at the Hotel Commodore, New York, on Wednesday evening, April 11. It will be in charge of the following committee: F. H. Chase, of Chase & Norton; E. Solomon, of the American Wood pulp Corporation; W. H. Martens, of Geo. W. Miller & Co., Inc.

The Railroad Committee read a very interesting report, having succeeded in getting a number of embargoes lifted and are now working in conjunction with Traffic Manager H. H. Masman, of the National Association of Waste Material Dealers, to correct a number of difficulties which have arisen between the shippers and the carriers.

News of the Chicago Trade

[FROM OUR REGULAR CORRESPONDENT.]

CHICAGO, December 18, 1922.—Reports from the woods in Northern Wisconsin are to the effect that logging operations are to be retarded unless men can be secured for this work. Latest statistics reaching Chicago are to the effect that the operators of Wisconsin and upper Michigan need at least 20,000 men to get out logs this winter for the paper mills and lumber industry. Since the abandonment of work on the hard roads, the supply of men has increased, but there is still a scarcity in some districts.

The Chicago Association of Commerce has an inquiry from Denver, Colo., firm which is in the market for paper cartons and boxes. Another firm at Dallas, Tex., is in the market for gummed tape.

R. S. Bull, city sales manager of the Bradner-Smith Paper Company, is on a business trip down East.

Announcement is made of the appointment of Daniel A. Stock, sales manager of the Munising Paper Company, with offices in Chicago.

Weir Brothers, who specialize in wrapping paper and twine report that orders from the retail department stores are exceptionally heavy for wrapping papers and twine. They are not so large in quantity but quite numerous.

To Auction Hercules Plant at Moodna

Percival Wilds, receiver for the Hercules Paper Corporation has given notice that he will offer for sale, at public auction, at the premises of the defendant at Moodna, Cornwall-on-Hudson, N. Y. at 12 o'clock noon, January 11, the following described property of the bankrupt corporation:

Over 64 acres of land located at Moodna, Cornwall-on-Hudson in the town of New Windsor and partly in the town of Cornwall both in Orange County, State of New York, with improvements thereon, large brick factory buildings, store-house, garage and workmen's dwelling houses, all factory equipment and papermaking machinery and furniture contained therein, together with railroad siding and water power.

The Receiver having received a proposed offer of \$50,000 cash for said property, the offerer to pay broker's commissions for negotiating the sale, no other offer will be considered at said sale unless it exceeds the sum of \$55,000.

The property may be inspected at any time during business hours and information with reference to same may be obtained from the receiver or Zalkin & Cohen, solicitors for the receivers, Chamber street, New York.

Eagle-A Service Houses in Twin City District

HOLYOKE, Mass., December 20, 1922.—The American Writing Paper Company announces the appointment of new Eagle-A Service Houses to serve the paper consumers of the Twin City district. They are the Leslie Donahower Company of Ninth and Wacou streets, St. Paul, and The John Leslie Paper Company, 301 South Fifth street, Minneapolis.

When it was announced about two weeks ago that The Whitaker Paper Company had disposed of its business in the Twin City territory, the printers were quite concerned lest their supply of Eagle-A papers should be interrupted. The American Writing Paper Company was, therefore, quick to answer the numerous anxious inquiries from these printers by appointing in each of the Twin Cities an outstanding paper merchant as an Eagle-A Service House.

Both houses will distribute the complete line of Quality Standard Papers made by the American Writing Paper Co., and thus make accessible to the paper buyers of that vicinity the vast resources of 26 unified mills operating fifty-five paper-making machines, and superintended by a staff of paper experts.



Bristol Instruments in the Paper Industry

The leading paper and pulp mills of this country have found that by the application of Bristol Recording Instruments to many processes, they have been able to obtain a better and more uniform product with a consequent improvement in plant efficiency. The great advantage of a Bristol Recording Instrument over a small indicating instrument lies in the following two points.

BRISTOL'S Recording Thermometers Electric Tachometers and Pressure Gauges

—furnish the operator of any process with an accurate guide as to at just what rate and to what extent the process is taking place

—furnish a fileable record of the varying conditions which enter into the process and as a check in the hands of the management to see that the best operating conditions are maintained

The fact that one large paper plant has over a thousand of these recorders in actual operation is not at all surprising when a few of the many advantages of these instruments are pointed out

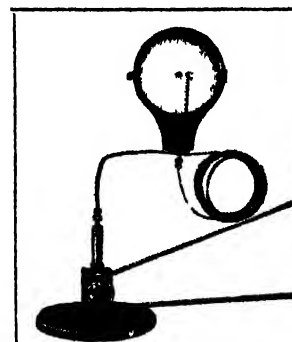
Bulletin BE 306 illustrates some Bristol Recording Instruments that are especially applicable to the paper and pulp industry. May we send it to you?

"With Bristol Instruments You KNOW"

THE BRISTOL COMPANY, Waterbury, Conn.

BRANCH OFFICES:

Boston	New York	Philadelphia	Pittsburgh	Detroit	Chicago
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WOOD PULP D I E S E N

BLEACHED



SULPHATE

BLEACHED SUPERIOR QUALITY

A STRONG, CLEAN BLEACHED PULP AT A MODERATE PRICE

Stock Carried on Docks at Boston and Baltimore.

Nilsen, Lyon & Co., Inc.

140 NASSAU STREET

Selling Agents

NEW YORK

New York Trade Jottings

S. Jacobson has recently been placed in charge of the papermaking rag department of Rudolph Wolf, importer of various grades of these rags, of 80 Wall street New York.

Samuel T. Bell, Dr. Walter A. Bell and George M. MacWilliam, of the Bell Bag Company, 63 Front street, New York, have recently returned after a six weeks' tour of the British Isles.

The William C. Jones Envelope Company, 708 Broadway, New York, has increased its capitalization from \$10,000 to \$100,000, notice having been filed with the Secretary of the State of New York on Monday, December 18.

Mr. and Mrs. H. Reeve Angel, of London, prominent in newspaper circles, who arrived on the *Iguania* last week, sailed home Thursday by the *Cornwall* after paying hurried visits to publisher friends in Boston, Philadelphia and New York.

The scheduled hearing of the Republic Bag and Paper Company, of 200 Fifth avenue, New York, before the Customs Division, to have occurred Tuesday of this week, has been adjourned until January 16, according to J. G. Cohen, attorney for the company.

The Whitaker Paper Company, of 48 Great Jones street, New York, has just issued an attractive sample folder describing its Basic Cover and Basic Text papers. These grades are regularly carried in stock in all Whitaker warehouses in white, India, gray and sky blue.

A. F. Tenhovaara, of Tammerfors, Finland, representing a large Finnish mill manufacturing tissues, is anxious to communicate with dealers in this commodity. Although he has not yet established a permanent connection in New York, he may be reached at 1462 Lexington avenue, telephone number being Lenox, 9611.

The American Woodpulp Corporation, of 347 Madison avenue, New York, announces that the connection of Emanuel Salomon with that company was terminated as of December 14, 1922. Officers of the company are now as follows: James Rosenberg, president; L. W. Brownell, vice-president and treasurer, and Kenyon Harris, secretary.

Louis T. Stevenson, president of the Glassine and Greaseproof Manufacturers' Association, has taken charge of the sales offices of the Mountain Mill Paper Company in its new location room 709 of the New Bowers Savings Bank Building, 110 E. 42nd street, New York. The phone number is Vanderbilt 0433.

A petition in bankruptcy was filed on Monday of this week against F. R. Mosher Company, Inc., news print dealer, of 51 East 42nd street, New York, by the following three creditors: Lynch Warehouse, \$20; United States Trucking Corporation, \$200; George H. Mead Company, \$4,885. Louis H. Wehl was appointed receiver under bond of \$25,000 by Judge Mack. Assets of the concern are estimated at \$45,000, while the liabilities are not given.

The Friedland Paper Co., Inc., wishes to announce that it is now established in its own building occupying seven floors at 121-23 Sullivan street, between Spring and Prince streets, New York, where its large floor space, 50 by 100, and much increased technical facilities will place them in a position to serve their customers even better and more promptly than before as converters

of news print and wrapping papers. The main office will be located at 220 Fifth avenue, New York, telephone Madison Square 3207-8-9.

* * *

Dr. Hugh P. Baker, executive secretary of the American Paper and Pulp Association and former dean of the New York State College of Forestry at Syracuse University, Warren B. Bullock, in charge of the information service of the American Paper and Pulp Association and former director of extension in the same college, together with W. E. Sanderson, for four years director of the summer camp of the New York State College of Forestry, have associated themselves together for the development of outdoor camps and schools. Announcement is made of the opening July 1, 1923, of Camp Mishike (the turtle), a forestry camp for boys from 11 to 17 years of age in the lake region of Northern Wisconsin, under the direction of Mr. Sanderson.

By-Products of Wood Cellulose

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., December 19, 1922.—The Chief Forester in his annual report to the Secretary of Agriculture to day has the following to say regarding by products of wood cellulose:

"Substantial improvement in the chemical products and by-products of wood cellulose are dependent upon a much more exhaustive knowledge of its chemistry than now exists. Research during the year established significant facts which have a direct bearing upon the most effective selection of material for chemical by-products. The possible increase in yields under chemical pulp processes from the 40 to 45 per cent now obtained to the theoretically possible yield of 60 per cent without decided loss in the quality of the pulp depends upon a much more exhaustive knowledge of cellulose chemistry.

"Investigations to improve the sulphite process developed a method of analyzing cooking liquor which permits an accurate control of the cooking time and pressure and thereby makes possible the accurate regulation of the cook and the quality of pulp desired. This method is now being tested commercially and should permit a marked improvement in the cooking of sulphite pulp. It has also shown the desirability of using water-saturated chips in the sulphite process—a radical change from the present commercial practice of using air-dried or even kiln-dried chips. Other important progress in pulp and paper investigations includes the completion of comparative pulping tests on approximately 100 commercial American woods; the development of methods for the successful grinding of jack pine for container board, which if commercially applicable will have a wide bearing on the value and future utilization of the enormous quantities of lake States jack pine; and further work on a method for deinking of news and magazine stock, which has been partially and will be completely tested on a commercial basis."

Milton S. Carris Marries Miss Kussy

[FROM OUR REGULAR CORRESPONDENT]

NEWARK, N. J., December 18, 1922.—On December 12 in the Washington Hotel ballroom, Newark, N. J., Milton S. Carris was married to Miss Sylvia Kussy, daughter of Dr. Joseph Kussy, 82 Clinton avenue, Newark. The ceremony was at six o'clock with a wedding dinner and reception immediately following.

Mr. Carris is treasurer of Carris & Watson, Inc., paper dealers at 75 William street, Newark.

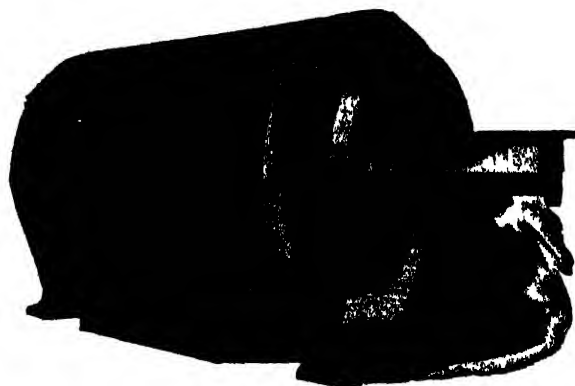
The firm of Carris & Watson have been in business two years starting in at 70 William street, but owing to increasing business was obliged to take larger quarters at 75 William street. They carry a complete line of paper, bags and twine.

The happy couple left on an extended honeymoon through the South and will be at home after the holidays at 400 Belmont avenue, Newark.

"IMPCO" TAILING SCREENER

FOR SCREENING GROUND WOOD TAILINGS

**Very Low
Power
and
Upkeep Expense**

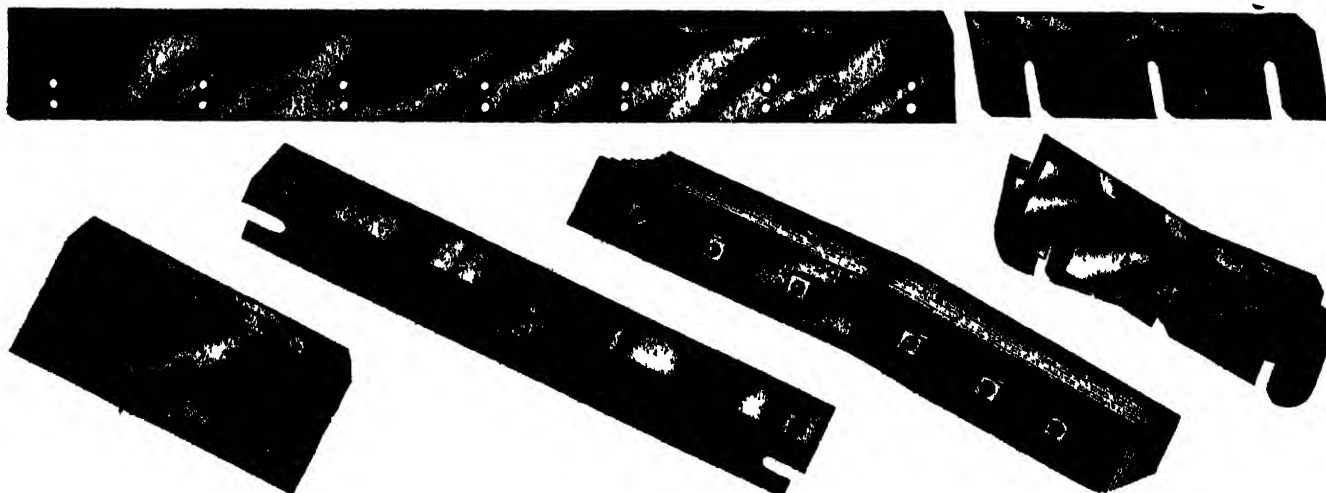


**Delivers
Rejections Free
from Good
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ANOTHER UNIT OF OUR CLOSED SYSTEM FOR PULP SCREENING
WRITE FOR FULL DETAILS *CORRESPONDENCE A PLEASURE*

IMPROVED PAPER MACHINERY CO. Nashua, N. H.
SHERBROOKE MACHINERY CO., LIMITED, SHERBROOKE, CANADA

Do not pay the price of the best and not obtain it
Roll Bars, Bed Plates, Barker Knives, Chipper Knives,
Rag Knives, Paper Trimming Knives, and Machine Knives
of every description used in paper mills.



Your purchase must be right and you must be pleased. Otherwise the transaction is not in our judgment a success. Let us have your inquiries.

R. J. DOWD KNIFE WORKS

Beloit, Wis., U. S. A.



*Friction —
the Unseen Enemy of Production
in Your Plant.*

To Plant Executives— When your Engineers and our Representatives put their heads together

WHEN one of our representatives comes to your plant, he comes not as a lubrication theorist, —not as a meddler in your plant,—not as a mere oil salesman.

He comes as a practical man with a practical knowledge of machinery and a specialized knowledge of oil. He comes to co-operate.

Your man contributes his knowledge of operating conditions and lubrication problems in your plant. Our man contributes from the Vacuum Oil

Company's wide knowledge of lubrication gained through many years of study and experience all over the world.

Thus, when your man and our man get together, they meet on common ground. They discuss the common problem of Lubrication from the standpoint of such practical matters as coal waste, power losses, preventable friction, overheated bearings, oil waste, repair bills, etc.

The sale of a barrel or so of oil is the last subject brought up.

VACUUM OIL COMPANY

If you are not already having the benefit of the Vacuum Oil Company service, we shall be glad to make a Lubrication Audit of your plant. See details below.

We are making Lubrication Audits every day in every country in every kind of plant. We make no charge for this co-operative service. Please feel free to call for it at any time. But as "any time" is likely to be "no time"—why not today?

The Lubrication Audit

Explained Step by Step in Condensed Outline

INSPECTION: A thoroughly experienced Vacuum Oil Company representative in co-operation with your plant engineer or superintendent makes a careful survey and record of your mechanical equipment and operating conditions.

RECOMMENDATIONS: We later specify, in a written report, the correct oil and correct application of the oil for the efficient and economical operation of each engine and machine.

This report is based on:—

- (1) The inspection of the machines in your plant.

- (2) Your operating conditions.

- (3) Our 56 years of lubricating experience with all types of mechanical equipment under all kinds of operating conditions throughout the world.

- (4) Our outstanding experience in manufacturing oils for every lubricating need.

CHECKING: If, following our recommendations in this audit, you install our oils, periodical calls will be made to check up the continuance of the desired results.

FOR THE ABOVE FREE SERVICE address our nearest branch office.

Domestic Branches:

New York
(Main Office)
Detroit
Des Moines

Boston
Pittsburgh
Buffalo
Dallas

Chicago
Indianapolis
Rochester
Kansas City, Kan.

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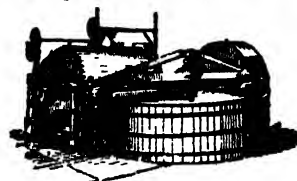
Lubricating Oils

A grade for each type of service

VACUUM OIL COMPANY

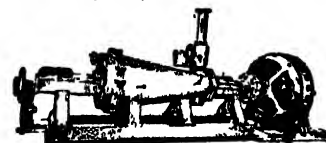
A Lubrication Audit

in the Paper Industry
would point out the Correct Lubrication
for the important machines as follows:



Beaters

Beater bearings, generally unnecessarily hot, will run cooler if the stock leakage is eliminated and oiling is regularly attended to. The regular use of **Gargoyle D. T. E. Oil Extra Heavy** overcomes beater lubrication difficulties.



Jordans

Because of the high speeds and heavy pressures which are always present, and the side pull on bearings when belt driven, it is necessary to use a heavy bodied oil. For this purpose we recommend **Gargoyle D. T. E. Oil Extra Heavy**.

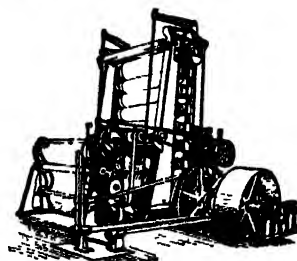
Paper Machines



For bearings of the paper machine, subjected to induced heat from steam used for drying, an extra heavy bodied oil is required such as **Gargoyle**.

D. T. E. Oil Extra Heavy.

The rolls at the wet end subjected to moisture and heavy pressure demand a compounded oil which will resist the washing tendency and maintain a perfect oil film. We recommend **Gargoyle Voco Engine Oil No. 1** for these specially trying conditions.



Calenders

Paper machine production is directly dependent upon uniform speed. Calendar bearings are subjected to heavy pressures and high frictional heat. The regular application of **Gargoyle D. T. E. Oil Extra Heavy** insures uniform speed, and consequently minimizes "broke."

Editorial

Vol. LXXV New York, December 21, 1922 No. 25
FIFTY-FIRST YEAR

Merry Christmas

The spirit of Christmas is with us again. This has been made very apparent in the past few days by the numerous cards and other expressions of good will of like nature which have been reaching this office. The PAPER TRADE JOURNAL is very grateful for all these remembrances and it takes this opportunity of expressing its thanks for them. To all of its numerous subscribers, to its advertisers and friends it wishes a Merry Christmas and a Happy New Year, with the hope that the coming year will be filled with much prosperity and other choice blessings.

Complaint Against Coast Dealers

Paper men generally throughout the country will watch with deep interest the outcome of the complaint of the Federal Trade Commission against the Pacific States Paper Trade Association, its officers and members because of alleged improper maintenance of prices and other unlawful practices. The charge certainly came as a distinct surprise because it has been believed that all the associations in the paper trade have been honestly endeavoring to obey both the spirit and the letter of the law in this respect.

The PAPER TRADE JOURNAL is told by one prominent authority in association matters, who visited the Coast two years ago, that it did not appear to him as though there was any necessity for collusion on the part of paper dealers or any other unfair methods of competition which might be regarded as in restraint of trade. At that time it was perfectly legal to establish a reasonable minimum wholesale price in the State of California. This right was set forth in the Cartwright Law, which it is believed, continues in effect to the present day.

The Federal Trade Commission has made a great many charges against the paper dealers and associations in this formal complaint. It will, undoubtedly, encounter considerable difficulty in proving that such conditions exist. The charges brought against the various associations and individual concerns must be proven to be in direct violation of interstate commerce regulations, else they are not within the scope of the Commission. The bulk of transactions carried on in the Pacific Coast region is consummated within the borders of a single state, but if even a small percentage of the business is of an interstate character and is shown to be illegal, the Federal Trade Commission has sufficient grounds to institute a complaint, and demand that such practices shall cease.

Perhaps the most important feature of the charges brought by the commission is that dealing with "legitimate" and "illegitimate" dealers. In the opinion, however, of those acquainted with the situation there is no such thing as an "illegitimate" dealer in the Pacific Coast paper trade. Many of the smaller dealers purchase regularly from the larger wholesalers and there would be nothing to be gained by ostracizing them as the complaint charges. Of course, if the Commission can prove conclusively that the

Pacific States Trade Association acting as a unit, and embodying the majority of paper wholesalers in that region, actually distributed so-called "black lists" or "white lists" among its members, requiring that they patronize certain houses and forbidding them to do business with others, and then that the members carried these mandates into effect, they would have grounds for requiring a cessation of such practice. We cannot conceive, however, that this has been the case. The wholesalers, under the California law, if we are correctly informed, have a right to establish a minimum price on their goods if this price is within reason. They also are endowed with the right to protect their business interests by every legal means. We do not believe that any more than this is being done.

The first paragraph of the complaint has to do entirely with jurisdictional facts which are purported to warrant such an investigation by the Federal Trade Commission. The second paragraph differentiates between "legitimate" and "illegitimate" wholesalers as they are alleged to be regarded and designated by members of the Pacific Coast Association. The third paragraph contains the "meat" of the complaint. It charges that the collusion on the part of the various associations will lessen and restrict competition in the sale of paper and paper products in the Pacific States, prevent brokers, agents and manufacturers from selling direct to the retail trade or to the consumer and other persons who are not members of the local associations from selling at wholesale in this region; enhance the wholesale price of these commodities above the price which would prevail under normal, natural and open competition and hinder the natural flow of commerce in these commodities in the channels of interstate trade.

It will be interesting to note the outcome of this investigation. It will serve to show paper wholesalers, dealers and their associations just what they can and cannot do. The laws in this regard are very vague and always subject to misinterpretation. This case will undoubtedly be regarded as a "test" case and associations the country over will base their future operations upon the decisions rendered. For this reason probably more good than harm will come of the matter. We feel that the operations of the Pacific Coast Paper Associations are such that they can stand the shedding of light upon them. The complaint will, however, give the lawmakers an opportunity of making some hazy points more explicit and this will be appreciated by every such association in the country.

Foreign Paper Prices Lower

The monthly average import price of news print was slightly less for September than the preceeding month, according to the latest foreign trade prices issued by the Department of Commerce at Washington. The price for September was only 3.49 cents per pound as against 3.59 cents for August, and 4.3 cents for September, a year ago.

The monthly average import prices of all varieties of wood pulp for September also showed a decline as compared with August. The average import price per ton of ground wood for September was only \$28.78 as compared with \$29.69 for August, and \$26.44 for September of last year.

The monthly average import price per ton of unbleached

chemical pulp for September was only \$51.75 as compared with \$53.35 for August, and \$61.35 for September of last year.

The monthly average import price per ton of bleached chemical pulp for September was only \$79.14 as compared with \$82.36 for August. The price for September of last year was \$69.52.

The average monthly import price of pulpwood per cord for September on the other hand as compared with August showed a considerable increase, the price for the former month being \$11.10 as compared with \$10.92 for the latter and \$12.78 for September a year ago.

The average monthly export price per pound of news print for September declined somewhat, compared with August, the figures for the former month being 4.4 cents and for the latter 4.7 cents. The figures for September a year ago were 5.3 cents.

The average monthly export price per ton of wood pulp for September was \$50.50 as compared with \$62.67 for August, and \$51.50 for September a year ago.

Reserve Board Reports Paper Demand Good

WASHINGTON, D. C., December 20, 1922.—Seasonal recessions in the production of the various grades of pulp and paper are shown by statistics for September, but demand has continued to be good for most lines, says the Federal Reserve Board in its monthly summary of business and manufacturing conditions.

Newsprint production for October totaled 130,682 tons, as compared with 125,402 tons during September, and 101,884 tons during October, 1921. Output of paper board in September reached the highest point attained in two years, but reports from the Philadelphia district indicate orders received by producers of card and box boards fell off in November, and operations have been accordingly reduced. Dealers in both the Boston and Philadelphia districts received a large volume of business during October and early November. Most of the mills in the Philadelphia district are operating at capacity on back orders. The demand for paper boxes in the Philadelphia district improved during November.

The general level of paper prices has been firm for some time, although slight fluctuations in certain grades have occurred. Pulp prices are advancing.

Waste Dealers Oppose Moisture Tests

NEW YORK, N. Y., December 20, 1922.—That the National Association of Waste Material Dealers, Inc., Times Building, New York, is opposed to any such moisture tests as were proposed by roofing paper and felt manufacturers, was clearly brought out in the meeting of the Paper Stock Division held at 11:00 a. m. yesterday in the Astor Hotel. This decision came as a result of a plan tendered by the Felt Manufacturers' Association whereby the allowance for moisture was placed at 7½ per cent. This figure, the association believes, should be advanced to 10 per cent.

Preceding the meeting of the Paper Stock Division, the Waste Paper Division convened at 10:00 a. m., yesterday. After a meeting of the Foreign Trade Division at noon, the entire assemblage retired for luncheon at 1:00 o'clock.

During the various meetings arrangements were made for a classification covering bagging and the association approved of a classification covering all cotton rags to be used by paper manufacturers.

To Sell Output of Phoenix Paper Co.

GREENWICH, N. Y., December 20, 1922.—The Sanquoit Toilet Paper Company, New Hartford, N. Y., has arranged to sell the output of the Phoenix Paper Company, of Battenville, N. Y. All inquiries for tissue toilet paper should be addressed to the former concern.

How Cost Associations May Function

WASHINGTON, D. C., December 20, 1922.—Trade associations or groups interested in cost accounting may meet solely for the purpose of the study of costs, the detection of errors and the improvements of their methods without contravention of law, in the opinion of Commissioner Nelson B. Gaskill, of the Federal Trade Commission. Mr. Gaskill further believes that it is perfectly legal to make reports of such conferences available to absent members, government agencies and other interested parties.

This opinion was expressed unofficially today by Mr. Gaskill in response to an inquiry from E. W. McCullough, manager of the Fabricated Production Department of the Chamber of Commerce of the United States.

"I have previously expressed my firm belief," writes Commissioner Gaskill, "that cost accounting is a legitimate trade association activity, and subsequent consideration has merely strengthened this conviction. Collective analytical study of the results of cost accounting furnishes an invaluable supplement to the individual cost accounting work. Comparison of results, analysis of results and the study and discussion of these results lead to the improvement of methods and the increase of efficiency. To prohibit collective study of costs for the purpose of their analysis, the detection of errors, and the improvement of methods, is to shackle educative progress.

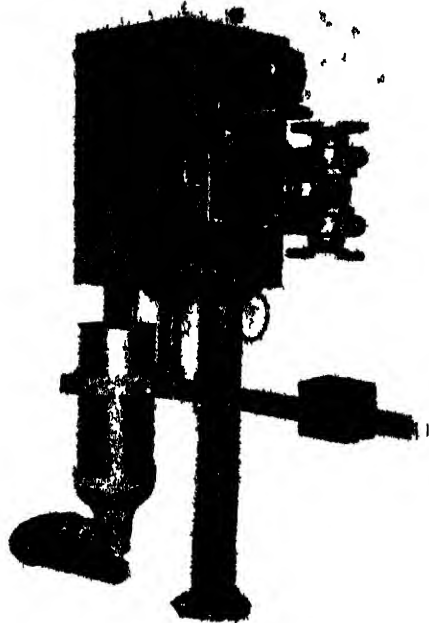
"Of course the legal situation is confused by reason of the decision in the Harwood Lumber case and the Linseed Oil case, and it will be some time probably before this confusion will be cleared by any additional authoritative decisions. Trade associations must therefore determine as accurately as they can the legitimate field of proper endeavor and, having so taken counsel, should, without hesitation, resting upon their legal advice and the clear consciousness of the propriety of their efforts, proceed without fear, willingly inviting the test of the courts' consideration of their conduct.

"I cannot find any reason for believing that the activities as defined by your questions are per se illegal. They may become so of course, if coupled with the use of other practices directed toward an unlawful end. But it is to be observed that a course of conduct lawful in itself, does not become unlawful merely because it may be used to accomplish an unlawful object. A course of conduct lawful in itself is judged by its result or by the intent with which it is used. Prior to the appearance of an unlawful result the unlawful intent must be so clearly manifested that the unlawful result is forecast as a natural and approximate consequence before the conduct can be condemned. A lawful course of conduct therefore may be condemned by presumption of an unlawful intent when an unlawful result must first be presumed in order to deduce from it the unlawful quality of the intent which guides conduct.

"A trade association activity conducted strictly in accordance with the terms of your question seems to me to stand clearly revealed as a legitimate activity directed to a lawful result. My answer to both your questions would therefore be in the affirmative."

Paper Salesmen to Meet at Springfield

The New England division of the Salesmen's Association will hold a conference with the paper mill executives of Holyoke, Springfield and Boston districts at the Old Colony Club, Springfield, Mass., on Friday, January 5, 1923. The affair is informal and will be a real man to man conference, from which much of value is expected to develop. Among the speakers will be President Phillip T. Dodge of the International Paper Company, President W. J. Raybold of the B. D. Rising Paper Company, and Judge Robert Munger of Ansonia, Conn. A real old-fashioned New England dinner will be served at 6:30 P. M. It is intended to call the conference at 4:30 o'clock in the afternoon, so as to have much of the business interest disposed of prior to the evening program. As it is the first of the New Year meetings it is expected a large attendance will be present.



**Don't GUESS at the Consistency of
Your Stock!**

KNOW what it is, and keep it UNIFORM by using

THE TRIMBEY AUTOMATIC CONSISTENCY REGULATOR

(Patented)

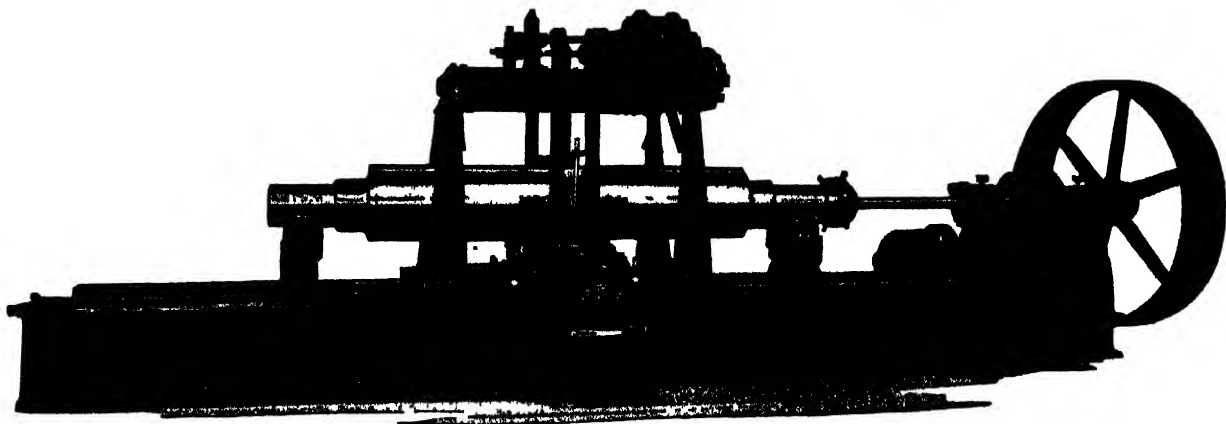
More than 175 in use in the United States, Canada
and Foreign Countries.

Regulators to fill Canadian orders are now
being manufactured for us by the Engineering
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Address all correspondence to

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LOBDELL ROLL GRINDERS are the only
machines of the kind fitted with auto-
matic crowning device which develops a perfect crown without the use of a
guide or former and repeated trying for the correct setting.



LOBDELL Calenders are equipped with Patent Electric Motor, Hydraulic
or Ratchet Lift all operated from the floor.

LOBDELL Micrometer Calipers are handy and accurate.

LOBDELL CAR WHEEL CO. Est. 1836 **Wilmington, Del. U. S. A.**

Section of the Technical Association of the Pulp and Paper Industry



AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.



Conducted by W.G. Mac NAUGHTON, Secretary

DISCUSSION ON PAPER TESTING AT THE FALL MEETING OF T. A. P. P. I. AT DETROIT

(Continued from last week)

S. D. WELLS: Mr. Curtis, is the Bureau of Standards doing any work to determine the durability of chemical pulp papers? Could you say that a well bleached sulphite pulp, which has been well washed and carefully manufactured was not as durable as a rag paper?

CHAIRMAN CURTIS: We are not doing any of that work now. However, I think it is a very necessary investigation.

I understand that by removing the *beta* and *gamma* cellulose chemically, as durable a sheet is obtained from wood fiber as from rag. The subject needs considerable investigation and I hope the Bureau, co-operating with some mill laboratories can go into that subject. We have all believed, I think, that rag is better than wood for durability, and for length of service, but I don't know of anybody with data to prove it.

S. D. WELLS: A sulphite paper that is insufficiently washed won't be durable, it will go to pieces in a few months; a soda pulp paper the same. I believe, however, we have had some wood pulp paper on hand at the laboratory for ten years that does not show any evidence of deterioration.

During the war we did a good deal of work with the War Department on the nitration of wood pulp, and as the work progressed, we experimented with unbleached wood pulp and got just as stable a product as from nitrated cotton which met specifications. The sooner we can make that investigation regarding durability the better it will be because it will save a great deal of money to the paper manufacturers.

CHAIRMAN CURTIS: We know that the cooking and bleaching of wood pulp are more severe treatments than the preparation of rags. We know that there are more chances of carrying the cooking or the bleaching too far than in the case of rags, but it is my opinion that with care in cooking and bleaching sulphite, a paper can be obtained that will probably last as long as the rag fiber, but the chances are greater in the case of the wood pulp of there being deteriorating factors than in the case of rag pulp.

H. U. KIELY: In considering durability does it mean taking a piece of paper of wood pulp and putting it in a drawer and letting it stand for ten years? Is that what you mean by ageing?

S. D. WELLS: Putting it in an office or in a library under conditions of actual use.

CHAIRMAN CURTIS: The subject is very complicated. I know that in India a report indicated that rag fiber is the only material that would endure there for any length of time. Moisture condi-

tions destroyed the wood fiber much more quickly than the rag fiber, and that substantiates the probable attitude that rag does last longer.

We have got two more subjects; one of them I am only going to take five minutes on, and then there is an open meeting on the other subject. I am going to give a little report on the questionnaire we sent out and then we are going to have an open meeting on testing, the sizing quality of paper.

We sent out through the secretary's office a questionnaire in regard to paper testing. The purpose was to find out what tests were being made on the different grades of paper, what was the general attitude toward testing, and what equipment was available for co-operative study. That is, to know what mills had folding testers and tearing testers, etc., to know what to look for in co-operation and to get a general idea as to the feeling of the members of the association as to paper testing. We received 54 replies, of which four didn't do any testing.

The greatest number of different kinds of apparatus used was in connection with weight and thickness and waterproof tests. There are ten or twelve methods for making waterproof tests. A large number of mills make no folding test, no breaking strength test, no absorption test, no sizing test, no tearing test, no finish test and no waterproof test. Of course the tests made are dependent upon the kind of paper being made and they haven't been subdivided into grades of paper because there is not enough data.

There is one thing that stands out and that is the apparent belief in the fact that the test for sizing quality and the test for water resistance are the same thing; that is, in many cases the same tests are applied for both.

The second thing that stands out is the fact that most of those replying don't know the accuracy of their apparatus; they say it is "O. K." and "very good," or the scale divisions are given say, on a Schopper tensile tester, if the scale is divided into one-tenth of a kilogram, that is the accuracy of the machine. The same is true with the Mullen and the other testing apparatus.

Another interesting thing that came out of these replies was the diametrically opposite opinion in regard to the Valley Size Tester and the Elmendorf Tearing Tester. Some are highly in favor of it and some think it is not worth anything. That should be investigated.

I am not going to report any further nor discuss this because there is not enough information. I am hoping that the secretary

can get some more replies so that we can draw conclusions that mean something. The committee, however, has been helped a great deal by a number of suggestions and there are many ideas on sizing tests and waterproofing which we can investigate and get co-operation on. It is not a very satisfactory return and the only conclusion I can make is that only ten per cent of the membership is interested in paper testing.

The next subject is Sizing Quality Determination. I said I wasn't going to say anything, but I am. F. T. Carson of our laboratory published an additional paper, or a supplementary report on the Determination of Sizing Quality in the *PAPER TRADE JOURNAL* of September 7. Last month he prepared a short synopsis of the paper which I am going to present.

Development of Test Methods for Sizing Quality

The purpose of sizing according to Cross and Bevan, is to affect the paper in such a manner that the absorption of ink will take place in a direction normal to the surface instead of laterally. According to this view sizing quality would necessarily be defined in terms of the spreading of the ink, i. e., in terms of surface capillarity or lateral absorption. On the other hand, all the test methods thus far proposed, with the exception of Herzberg's Ink Stroke method and possibly Sammet's method, are of such a nature as to measure the absorption normal to the surface.

The various methods are classified in the following table:

Lateral Absorption or Surface Capillarity	Normal Absorption	Normal Penetration	Difficult to Classify
Herzberg Ink Stroke Method	Tongue Test Ink Drop Test Curl	Klemm Ink Flotation Indicator Modification of Klemm Acid Flotation Schluttig Neuman Leonhardt Ferrocyande Denol (Patented) Stöckigt Modified Stöckigt (Unpublished) ¹ Okell Electrolytic Valley Size Tester (Modification of Okell) Hickman (Unpublished) ²	Sammet
Undeveloped New Method			

The common conception of sizing quality is, therefore, seen to demand either that the definition be in terms of normal absorption or penetration, or that the normal absorption bear a constant relation to lateral absorption and, therefore, be a measure of it. Such a relation holds true in only a very general sense and is tenable only for very rough comparative tests on paper of the same class, i. e., of the same composition and structure.

It would seem that "sizing quality" could not truly be defined in terms of either lateral absorption or normal absorption alone, but is to be judged as a result of the independent measurement of both, just as the strength of paper is judged as a result of independent measurements of strength in cross and machine directions.

Again, just as the strength in one direction or the other may be the predominating factor for a given use, so the lateral absorption or normal absorption may be the predominating factor for a particular use. Obviously, for writing with pen and ink the lateral absorption is of primary importance while the normal absorption is secondary. In printing both are of importance. In testing for suitable paper to prevent offsetting normal absorption becomes the predominating factor. In testing the "sizing quality" of paper intended to be tub sized the normal absorption is the only factor of importance. This is also true for blue print papers.

Purpose and Requirements

(1) For mill control and checking progress in manufacture it is probable that either type of method would do, for the test is merely comparative on papers of the same class. A high degree of accuracy is not essential. But a test method should be able to differentiate somewhat within the three general groups; slack-sized,

medium-sized and hard-sized. It should also be as far as possible independent of the effect of thickness on the test in order that variations in thickness on papers of even the same class will not lead to erroneous conclusions.

(2) The consumer needs methods which will measure independently the two kinds of absorption and with an accuracy at least equivalent to that needed in the mill, for the consumer may have to make the same kinds of demands on papers of different classes and from different sources. The methods should, therefore, be independent of composition and structure as well as thickness. The particular demands will determine which kind of absorption it is of primary importance to measure.

(3) Much more exacting requirements of tests methods are made by research work into the effects on sizing quality of the various materials, processes and methods of treatment in the manufacture of paper. It should be possible to measure both kinds of absorption with considerable accuracy. It seems possible, however, to obtain important data by the use of either kind of test method alone in dealing with the factors which influence sizing quality in papers of the same class. No method thus far proposed is considered sufficiently developed, accurate and dependable for conclusion results. Certain tendencies, however, can no doubt be determined by the use of the best of the methods in conjunction. However, for the study of such questions as the precise facility with which different kinds of fibers are sized and the comparison of the effect of different finishes and surface treatments, the present methods would probably be found inadequate.

The development of the best of current methods is to be pressed. Certain modifications and improvements are being tried which it is hoped will increase the value of these methods. Two new (unpublished) methods are also being developed.

(CHAIRMAN CURTIS: Has any one done any more work since the last meeting on sizing quality? Mr. Peckham, haven't you done some work on that?)

H. L. PECKHAM: We have, on approval, the Valley Size Tester, but have only had it about a week. We have used the flotation test for three years and we compared results with the Valley Size Tester. The result checked approximately ten to thirty seconds on ledgers, 28 pound ledgers, and on bonds within five seconds. However, there is so much more work to be done on it that we haven't arrived at any definite conclusions.

One difficulty is that the Valley Size Tester method is entirely too long and complicated for control purposes and especially an objectionable feature is the placing of the sample.

CHAIRMAN CURTIS: Has any one else anything to say on this sizing quality? Has anybody done any work on it?

R. H. NORRIS: We use quite a lot of paper similar to book papers for gumming purposes, and during the last few years we have found quite a large range in those papers in the way they take the gum or glue. As the paper is gummed, the gum should stay on the surface; it is no good on the interior of the sheet as it only makes the paper wiry and stiff. The finished product isn't as good when the glue has gone into it, it also requires more glue thereby increasing the cost of production.

We have been trying to work out some method for classifying papers as to their gumming qualities. We have tested them out by a number of different methods; some of them haven't been practical from our point of view, and others haven't given us the actual working conditions. The method we are using now and apparently getting the best results in flotation on an acid, with an indicator on the other side. That gives the normal penetration but doesn't take into consideration the thickness of the paper.

A. T. RANDALL: We have a problem where we treat paper with bakelite and we have found that the porosity of the sheet gives us more information in absorbency tests.

CHAIRMAN CURTIS: I want to bring out here some of the things that I, as Chairman of the Committee, have been up against. A representative of one of the electrical companies asked "What is

¹ Leonhardt & Stöckigt attempt to account for thickness by using the weight factor.

² Thickness is to be considered in these test methods.

the method of determining the penetration of air through a sheet? Give us a method for that." Another man, Mr. Morrison, from Newton Falls wants a good method for measuring opacity of paper. I think it is up to the committee to help on such problems.

My observations, particularly in the last year, have led me to feel that there is an increasing interest in paper tests. I get it through correspondents who used to write in and just ask a general question on paper testing. Now they ask specific questions, and make inquiries as to accuracy. There seems to be a tendency to consider paper testing more important, and I think the committee has a definite responsibility in considering all these tests and putting them under advisement.

There is one more point I want to bring up. Here is a letter I received this morning which is indicative of this very thing. It is from the Chairman of Committee D-9 on Electrical Insulating Materials of the A. S. T. M. It reads:

"Dear Sir: Committee D-9 of the American Society for Testing Materials is working on the general problem of standardizing methods of testing electrical insulating materials. An important class of such materials is untreated paper, a large quantity of which is used in the electrical industry. We have a subcommittee working on tests for sheet insulating materials, including tests of untreated papers which are used for electrical insulating purposes, the subcommittee being under the chairmanship of Mr. Dean Harvey, Materials and Process Engineering Department, Westinghouse Electric & Mfg. Company, East Pittsburgh, Pa.

"My attention has been called to the fact that your committee has been and is doing a large amount of work along the same line and the suggestion has been made that co-operation between our committees, insofar as standardization of methods of testing paper is concerned, would be of value both to you, as representatives of the manufacturers, and to us as representing very largely the consuming interests.

"I am taking the liberty of sending this letter to you through the courtesy of Mr. A. T. Randall of the Westinghouse Electric & Mfg. Company, with the thought that you might desire to present the suggestion to your committee at the meeting which, I understand, is to be held in Detroit next week. If the suggestion that co-operation between the two committees by means of exchanged representatives meets with your approval, definite arrangements can be worked out later.

(Signed) F. M. FARMER."

That is indicative of the necessity for the Paper Testing Committee to assist consumers in getting right kind of tests and also of the interest in this subject.

I am going to ask Mr. Randall to say just a word or two as to his problem. Mr. Randall.

A. T. RANDALL: I suppose you mean what tests we are interested in for electrical papers?

CHAIRMAN CURTIS: Yes, just briefly.

A. T. RANDALL: The first thing is dielectric strength for metal particles. That is an easy test. Another test is the porosity of the sheet which will give the measurement of absorbency, in a way; that is, just how much bakelite or varnish will sink into the sheet. Then we are interested in basis weight, Mullen, tensile, ash, machining qualities of plate made from the paper, and fiber analysis to show whether the paper is made from rag or wood pulp, because when these papers are treated and heated, we find a wood pulp will break down and won't stand the treatment, so it is necessary that the sheet be mostly rag. Then, of course there is moisture content and acidity for light papers. Tearing test is one of the most important tests because it will show just how the paper will go through the treating towers. The tearing tests are more important than the tensile tests.

CHAIRMAN CURTIS: Does any one have any suggestions on this? Is it desirable that this Committee co-operate with Committee D-9 of the A. S. T. M.? My thought on the matter is that if we can co-operate we will eliminate several discrepancies between standard

methods of testing. There is no use of every consumer having his own methods of testing, and the manufacturer certainly ought to have a chance to discuss the matter with him and get a method which is as fair to the manufacturer as to the consumer. As it seems to me, there is an opportunity here for the manufacturer to help out the consumer, and I am in favor of helping out the consumer as much as possible.

S. D. WILLIS: I certainly think it would be desirable to get together with them and work the tests out together so that there wouldn't be a large number of independent tests. There is probably one test that would meet all the needs of the situation.

CHAIRMAN CURTIS: Miss Kiely, what do you think?

H. U. KIRBY: I would like to co-operate with them and that is the thing we should do by all means.

H. L. PLECKHAM: I am in favor of co-operating.

CHAIRMAN CURTIS: Are there any other suggestions on this?

We are planning quite a bit of work this winter for the Spring meeting. We are going to finish up the microscopic work, if we can, the folding, take up the study of tearing tests, probably have one or two papers on sizing quality and one, I hope to have ready on a method of measuring the coloring of paper. I ask every one to co-operate with the Committee this winter and give them all the help they can, and if you haven't filled out one of the questionnaires, please do it. It may take some time because you may not have on record the accuracy of your apparatus, but give the best information you can.

(To be continued)

R. S. Kellogg Speaks at Watertown

WATERTOWN, N. Y., December 18, 1922.—R. S. Kellogg, of New York, secretary of the News Print Service Bureau of New York, spoke at the Rotary Club luncheon Wednesday noon of last week at the Hotel Woodruff. He spoke particularly of the news print situation that is now confronting the United States.

He cited the fact that it would be absolutely necessary for the utmost reforestation plans to be carried out in order to put the timber lands of the United States and Canada upon a bigger producing basis. He predicted that in 20 or 30 years from now, pulpwood would be higher in price than in 75 or 80 years when the new growth of wood would be ready to cut.

The United States uses one-half of all the paper produced in the world. During the present year, there will be an average of 140 pounds of paper used by every man, woman and child. The amount of newsprint alone that will be used will be 40 pounds.

Mr. Kellogg stated that newspaper advertising was largely responsible for the increased consumption. Another factor is the increased size of almost every daily paper over a few years ago. He claimed that the national advertisers were using the newspaper to a greater extent to quickly get their message to the people. At the present time, newspaper advertising is only 5 per cent under the 1920 peak and that magazine advertising is now 35 per cent under showing the rapid advance of newspaper space used. There will be more than 2,500,000 tons of news print used in America this year.

Mr. Kellogg stated that there would be no need for any publisher to go beyond North America for news print paper and the 1923 production would be greatly increased by the new machines that were being installed daily in the largest mills of the country. The biggest proposition now is to secure the raw materials in which to make the paper.

In 1920 the publishers had a great scare, he stated, and when the excitement died down, the publishers found out that they had 50 per cent more on hand, that there had only been a 5 per cent increase in consumption and that there had been a 10 per cent increase in production. The publishers finally woke up that they had laid in the greatest stock of reserve at the highest prices there were ever known. The consumption for 1923 will be at least 13 per cent greater than in 1920.

THE RUTH HEAT ACCUMULATOR*

A Discussion of Its Characteristics and of its Importance to the Paper Industry.

By FRITZ ENGLERT.

Foreword

The Ruth heat accumulator, which was invented by the well known Swedish engineer, Dr. Ruth, is not unknown to the American paper industry. Its importance, as a heat-saving apparatus, to that industry is not altogether appreciated in America, and only recently the president of a large paper company, on his return from Europe, had a good deal to say about the importance of the apparatus. It was accordingly considered well worth while translating the rather long article by Englert, in which there is given a very good description of the peculiar features of the apparatus and of the practical results that can be obtained with its use in paper mills.

1. General Fundamentals

The efforts, that have been made in the attempt to conserve steam, have been limited almost entirely up to the present time to the metallurgical industry. In metallurgical plants it is customary to collect the exhaust steam from regularly or irregularly periodically operating steam consumers, mostly large steam engines, and to lead this exhaust steam in a uniform flow to secondary steam consumers, ordinarily steam turbines. The various heat accumulators of the hot water, surface and other types, which have been used for this purpose up to the present time, have only a very limited capacity for heat accumulation, even when they are of very large volume. For they must be able to work in locations at low points and in confined surroundings, and, furthermore, they must be able to operate with slight or almost no variation in pressure. A diminution in the steam consumption of a definite installation is always connected with their use. The variation in the steam consumption of the prime consumer, however, is transmitted directly to the boiler house and can be met by the latter with more difficulty the less possible it is to foretell just when the increased steam demand will take place. It is just in this direction that the invention, made by the Swedish engineer, Dr. Ruth, is able to furnish redress. His task was to make possible regular production of steam in plants where the variation in steam demand is very great. This is done by absorbing, that is storing, the excess steam at times, when the production is greater than the consumption, so as to yield this excess up again when the reverse condition holds good. Hence in those plants where the steam consumption varies, it affects the maintenance of a regular uniform supply of steam for the steam users. It therefore acts like the flywheel of an engine or like a storage battery which stores up excess energy and yields the same when called upon.

Ruth Accumulator is a Hot Water Apparatus

Just like the Rateau accumulator and the fireless locomotive, the Ruth accumulator works on the hot water principle. Its physical basic characteristics are similar to both of the aforementioned apparatus. Similar to the fireless locomotive, it has a high working pressure and pressure limits, including a wide range of working pressures. It is differentiated from the fireless locomotive in being connected fast to the heat consumer, and from the Rateau regenerator--not including the pressure conditions--by its installation between the steam producers and the steam consumers and by the possibility of its introduction into steam lines feeding apparatus which are simultaneously heat and power consumers.

Processes Taking Place in the Absorption and Delivery of Steam

If D kilograms of steam, possessing a heat content of X heat units per kilogram, are fed into an accumulator, the water in which

*Zellulose und Papier 1922, 213-223. Translated by Ismar Ginsburg B. S., Chem. Eng.

is equal to G kilograms in weight, the temperature t degrees Cent. and the heat content of the liquid q heat units per kilogram, then the steam is condensed in the water, whereat the weight of the water is increased to G plus D kilograms and the heat contained in it is increased to q_1 heat units per kilograms. This is co-ordinate with a definite temperature t_1 degrees Cent. which is prevalent in the heat accumulator at the pressure existing therein. When for the time being the heat losses are not taken into consideration, then we have the following equation:

$$Gq + DX = (G + D)q_1$$

This equation enables us to determine the increase in pressure during the charging operation.

The removal of steam from the accumulator results in the dimi-

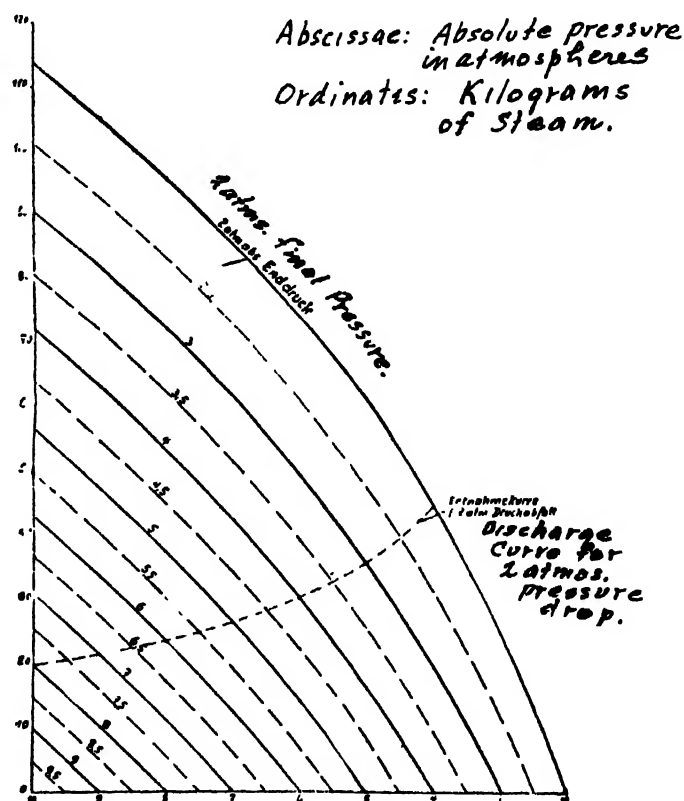


FIG. 1

Quantities of Steam Discharged From a Heat Accumulator of 1,000 Kilograms Initial Contents, Between Different Pressure Limits.

nution of the pressure, the magnitude of which may be determined from the following equation:

$G_1 q_1 - D_1 X_m = (G_1 - D_1) q_1$. In this equation no account is again taken of the losses in cooling. Consequently, the symbol X_m denotes the heat content in the steam leaving the accumulator.

Steam Discharge from an Accumulator

In Fig. 1 there are given all possible values of D_1 , quantity of steam that can be removed from the accumulator, for a range of pressures from 1,000 kilograms of initial weight in the accumulator. From this figure it can be seen that the quantity of steam becomes greater as the pressure limits lie further away from each other, but that a definite reduction in pressure yields a greater

amount of steam, the lower the pressure region lies with which this takes place. The curve, showing the removal of steam for a pressure drop of 2 atmospheres, allows this conclusion to be drawn. In the higher pressure regions the differences are still greater. A reduction in pressure from 20 to 19 atmospheres absolute yields 5 kilograms of steam for each cubic meter of water in the accumulator at the outset. Such a drop in pressure, however, from 3 to 2 atmospheres absolute yields 23 kilograms of steam, which is almost five times as great.

Explanation of Steam Yield with Pressure Drop

The explanation of this phenomenon is as follows. The water vapor temperature changes much more greatly in the lower pressure regions than in the upper pressure regions. If the accumulation capacity that is required of the accumulator is first determined and if its pressure limits are known, then from Fig. 1 it is possible to determine the weight of the water that is filled into the apparatus at the start and also the cubic contents of the apparatus, which is chosen as a rule about 5 to 10 per cent greater than the volume of the filling water.

Dimensions of the Heat Accumulator

Among other things the requirement, that the surface of the accumulator should be as small as possible in relation to the weight of the water filling, is one of the principal factors which determine the selection of the dimensions of the accumulator. This is of particular importance as far as the resulting heat loss is concerned. By far the majority of the accumulators, which have been installed up to the present time, have been located in the open. As a rule they are provided with a heat protective covering of kieselguhr or asbestos. They are also protected against the weather with a thin sheet metal covering which is both rain-proof and weather-resistant. The heat losses in such an installation are of importance. These losses may be calculated with a considerable degree of accuracy under these conditions. If the coefficient of heat transmission from non-boiling water to iron is assumed to be 700 calories per square meter-hour per degree Centigrade, and the coefficient of heat conductivity of one meter kieselguhr, according to the most recent experiments, to be 0.08, while the heat transmission to air, moving at a moderate rate of speed, is assumed to be 5, then the heat loss in an accumulator per hour, which has a wall thickness of 22 millimeters, is found to be 0.875 calories per square meter per degree Centigrade.

Heat Losses in Accumulators

In the case of a heat accumulator, which has an internal diameter of 3.5 meters and which is operated at a pressure of 7 atmospheres, 169 degrees C., to which the above-mentioned thickness of sheet metal applies the heat losses at a constant external temperature of 0 degrees C then become equal to 0.875 times 169 or 148 calories per square meter per hour. If the capacity of the heat accumulator is fixed at 125 cubic meters, then the surface area is 150 square meters, so that the total hourly heat loss becomes equal to Q or 150 times 148, that is 22,200 calories. In the plant, of which this heat accumulator forms a part (The Grycksho Cellulose and Paper Works, Sweden), the hourly production of steam amounts to 6,050 kilograms which has a total heat value of four million calories. The total heat loss amounts only 0.5 per cent, figured on this quantity of total heat in the steam.

The Cooling Effect in the Heat Accumulator

The cooling effect, which takes place, when the filled heat accumulator is cut off from the steam boiler and left to itself, may be calculated as follows. If the temperature of the contents of the heat accumulator is assumed to be T at any moment, the temperature of the external air, which is assumed to remain constant is taken as t , then in the differential time dz the quantity of heat that is emitted may be found from the following equation:

$$dq = O. k. (T - t) dz. \text{ In this equation } O \text{ represents the total}$$

surface area and k the calculated coefficient of heat transmission. The heat content of the vessel changes by the quantity $G. c. dT$, if G is the weight of the water in the accumulator, and c the specific heat of the water, which is assumed to be constant for the sake of simplicity of calculation. Then the following must be true:

$$G. c. dT = O. k. (T - t) dz \text{ or } \frac{G. c. dT}{T - t} = O. k. dz. \text{ When this}$$

differential equation is integrated, the following expression is obtained: $G. c. \ln \frac{T_1 - t}{T_2 - t} = O. k. (Z_1 - Z_2)$. By means of this

equation it is possible to calculate the cooling that takes place within any given definite space of time, or else the time that elapses, during which a certain amount of cooling takes place. In our case, when the outside temperature was 15 degrees C a cooling of 4 degrees C took place within 24 hours, and it took about 119 hours for the temperature of the heat accumulator to sink to 150 degrees C.

Calculated Values Agree with Experimental Values

These calculated values agree very well with the values that were derived from actual experimental observation. In one case, that of the Hallstavik paper mill, the water in a heat accumulator, having a capacity of 85 cubic meters and a surface area of 130 square meters, was cooled off about 7 degrees C, from 154 degrees C to 147 degrees C, within a period of 24 hours, when the temperature of the surrounding air averaged about 13 degrees C. According to the given conditions this corresponds to a coefficient of heat transmission, equal to 0.8 calories per square meter per hour per degree C, which agrees very well with the value found by calculation, 0.875.

The heat losses are so small that there need be scarcely any fear that a heat accumulator, which is allowed to remain standing, in the winter time, will freeze up. At an external temperature of minus 10 degrees C, lasting for an indefinite period of time, it is estimated that the time, which would have to elapse, in order that the contents of the heat accumulator be cooled down to 0 degrees C, would be equal to 2,500 hours or approximately 100 days.

2. The Determination of the Capacity of the Accumulator and Special Arrangements of the Accumulator

The determination of the capacity of the accumulator presupposes a careful ascertaining of the nature of the steam consumption, that is its variation with the time, and the critical utilization of the results, in order to be able to develop a heat accumulator, which, without being unnecessarily large, is as elastic as possible. Inasmuch as operation with accumulators removes the necessity of adapting the boiler house to meet the demands of sudden increases in the steam consumption, it becomes possible very often to draw off a given quantity of heat in shorter time than before and to make the same, in that the quantity of steam that is produced within an hour's time is considerably greater than heretofore. This denotes corresponding shortening in the operating time of the heat consumer and corresponding increase in its efficiency. The changes, that occur during the course of the steam consumption, must be taken into consideration in the determination of the capacity of the heat accumulator.

Capacity of Accumulator Determined Similarly to Mass of Fly-Wheel

The determination of the capacity of the accumulator with the aid of curve diagrams, indicating the steam consumption, which are either derived from actual experimental observation or else assumed so as to approximate practical conditions as closely as possible, is carried out in a manner similar to the determination of the mass of a fly-wheel. As this has to absorb varying amounts of work done upon it and then give it up again later, without the variation in the angular speed exceeding a certain maximum limit,

so similarly the heat accumulator has to absorb and then give up again varying quantities of steam within definite pressure limits. The variations in the temperature, which take place in conjunction therewith, are in most cases of no importance in digesting and heating installations, as long as that minimum temperature, which is required unconditionally for the proper course of a definite chemical reaction, is maintained. Then within certain definite limits each increase in the temperature has only an accelerating effect on the chemical reaction as a rule.

The Steam Consumption Curves

The curves, which are used to indicate the consumption of steam, are advisedly time curves, that is, they show the variation in the steam consumption with the time. The surface area, enclosed between two time elements, then represents the total amount of steam that is required for the operation of the apparatus within the specified time. The average height of the curve indicates the average regular hourly production of steam in the boiler, the production of which is the task of the heat accumulator.

The actual steam demand fluctuates in a definite manner along the line of the average steam production. The negative excess

tion remains constant. It also holds good when both the steam production and the steam consumption changes. The variations in the production of steam are caused by fluctuations in the amount of heat fed to the boilers. This takes place particularly in those paper mills, in which the boilers are fired with wood, as considerable variation can occur in the heat value of the wood used due to the fact that the quantity of wood refuse that is burnt may vary as well as the moisture content of the wood itself. In such plant the minimum steam production may just accidentally coincide with the maximum steam consumption. Under these conditions the value of the heat accumulator is well demonstrated as practical tests have shown that it can supply the steam demands without any difficulty.

Heat Accumulators and Electric Steam Generators

In certain plants, such as the Wargoen paper mill in Sweden, steam is generated with the aid of electricity produced from water power. The peculiar properties of the electric steam boiler, make the insertion of the heat accumulator in the steam line between the boiler and the irregular steam consuming apparatus of particular advantage.

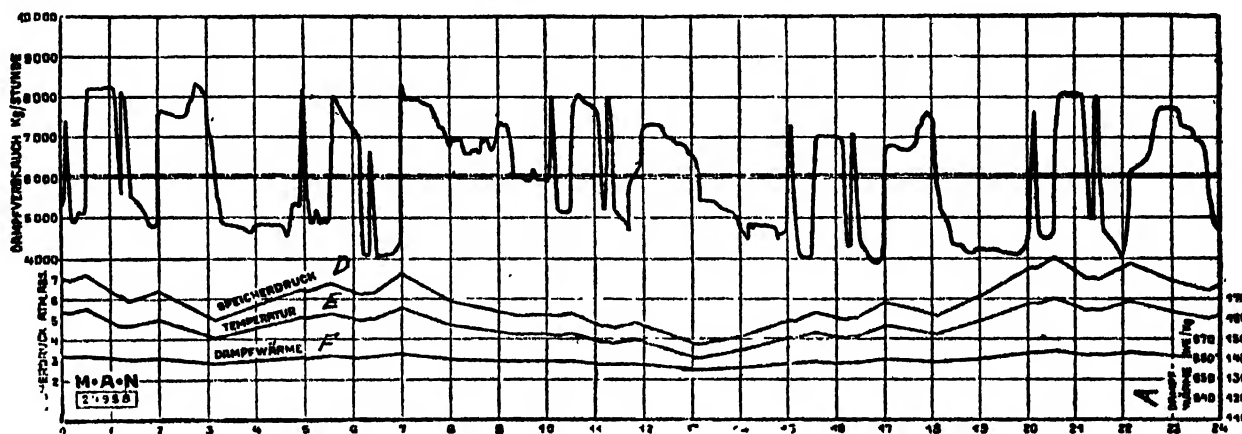


FIG. 2

Curve Showing Steam Consumption in a Paper Mill, the Heat Accumulator Being Used to Equalize the Steam Consumption and Steam Production. A, Heat in Steam in Heat Units per Kg.; B, Pressure in Heat Accumulator in Atmospheres (absolute); C, Steam Consumption in Kg. per hour; D, Pressure in Heat Accumulator; E, Temperature; F, Heat in Steam.

surface area represents the quantities of steam and heat, which the accumulator yields, as the pressure is reduced, the positive deficiency surface area then represents the quantities of steam and heat that the accumulator must absorb as the pressure rises. The valuation of the negative excess area and the positive deficiency area by the aid of the planimeter with proper consideration of the signs will then yield a maximum and minimum value of the capacity of the heat accumulator, the difference between which gives the greatest change in the water capacity, which is of equal importance as the sought-for power of the accumulator.

Description of Figure 2

Fig. 2 represents the steam consumption curves of a paper mill for a period of time of 24 hours, and it is assumed that the variations (highest value up to 8,500 kilograms) can be equalized through the aid of an accumulator. The average uniform production of steam then sinks to about 6,050 kilograms per hour. This connotes a decrease in the heating surface area of the boilers, which are used in the operation of the plant, amounting to approximately 23 per cent. In special cases it is possible to reduce this heating surface about 50 per cent by the use of suitable heat accumulators in the plant.

Variation in Steam Production and the Use of Accumulators

What has been said above applies as well to the case in which the quantity of steam produced varies, while the steam consump-

The Use of Boilers as Steam Accumulators

The idea strikes one that it is possible to use the steam boiler itself as a heat or rather steam accumulator. Then when the pressure is reduced and the water content is decreased more steam can be produced than corresponds to the quantity of heat that is in the fuel, which is fed to the boiler at the very moment. The principal determining factor under these conditions is the water capacity of the boiler.

Use of the Heat Accumulator with the Fire Tube Boiler

In this connection the use of the heat accumulator with the fire tube boiler is most advantageous, as this type of boiler has been used universally under all sorts of operating conditions up to the present time, particularly under the condition of strongly fluctuating steam demands. It possesses large water capacity and is operated under comparatively low pressures. As we have seen above, this condition is likewise of importance in determining the magnitude of the steam output on the basis of the water content in the boiler. The water capacity of the single fire tube boiler (the Cornish type of boiler) and of the double fire tube boiler (the Lancashire type of boiler) amounts to 180 to 200 liters per square meter of heating surface, while the water capacity of a new type of water-tube boiler, having a heating surface of 367 square meters, is only 60 liters. If the latter is driven at a pressure of 20 atmospheres and if the pressure is allowed to decrease to 4 atmospheres, then 515 kilograms of steam in all are obtained

from it. An equivalent fire-tube boiler installation must have approximately 520 square meters of heating surface and when the pressure is reduced from 10 atmospheres to 8 atmospheres, the accumulation capacity is approximately 1,650 kilograms of steam or more than three times as much. This represents the steam produced by the boiler under these conditions. Quite removed from the consideration that the given variations in pressure react in the most unfavorable manner possible on the steam consumption and on the operation of the power apparatus that are connected with the boiler, it is just in paper mills that considerably greater accumulation capacity is required in the majority of cases, so that under these circumstances even fire-tube boilers are eliminated.

The insertion of the accumulator means now nothing more than a great increase in the water volume of the boiler and a broadening of its pressure limits and consequently it permits the use of the more economical water-tube boilers under conditions of regular operation, independent in the highest degree of the skill and care of the stoker.

Use of Water Tube Boilers

Moreover the use of the water tube boiler permits the production of high pressure and high superheated steam, whose pressure can be reduced by passage through the power-producing apparatus, which may be considered as energy-yielding reducing valves, to that pressure at which it can be used in digesters, drying apparatus and other machines in the paper mill. This pressure often amounts to 6 to 6.5 atmospheres.

Construction of the Ruth Accumulator

As may be seen from Figs. 3 and 4, the Ruth heat accumulator has as a rule a cylindrical form, provided with hemispherical ends. The surface area of a heat accumulator, constructed in this manner, is smaller than that of an accumulator, of the same capacity and the same diameter but provided with flat or slightly dished ends. Likewise the resistance to stress of the hemispherical ends is greater than that of the dished ends. The safety nozzle has the purpose of limiting the rapidity of the removal of steam, so as to prevent the boiling over of the contents of the accumulator, when great quantities of steam are suddenly removed from the

tom of the accumulator. The emission of the steam from the outlet takes place accordingly against the pressure of a definite column of water, which however is of no importance, due to the fact that the pressure limits, within which the majority of the Ruth accumulators work in contradistinction to other systems of heat accumulation, are very broad. The charging arrangement gives rise to such a good circulation of water, that the temperature within the water mass in the Ruth apparatus does not vary more than 0.2 degrees C at the very maximum.

Charging and Discharging of the Apparatus

The charging and discharging of the Ruth accumulator is ac-



FIG. 4

The Ruth Heat Accumulator.

complished through the two back-pressure valves *e* and *f*, the first of which opens towards the heat accumulator and the charging arrangement and the second towards the discharge pipe. If a pressure sets in in the piping, which connects the heat accumulator with the steam boiler, or in the exhaust steam piping con-

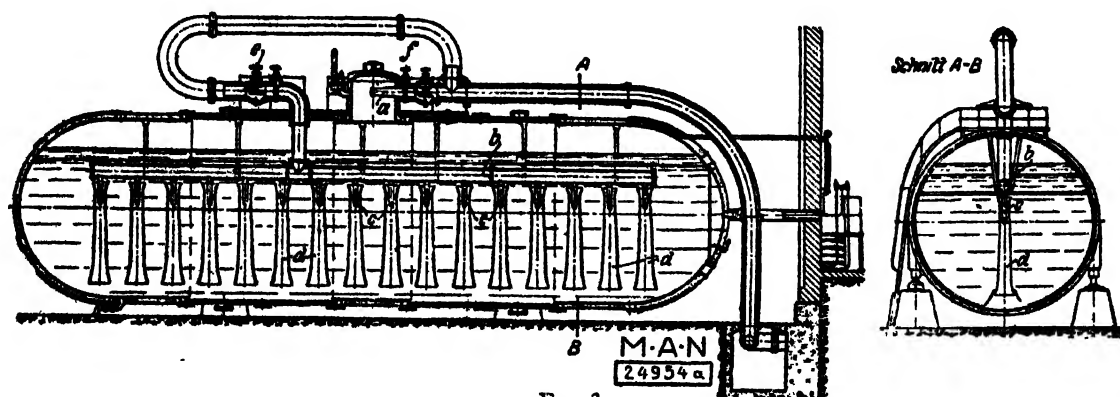


FIG. 3

Cross-sections of a Ruth Heat Accumulator. A, Safety Nozzle; B, Distributing Pipe; C, Discharging Outlet; D, Diffusion Tube; E, Back Pressure Flap for Charging the Apparatus; F, Back Pressure Flap for Discharging the Apparatus

apparatus or when a tube breaks, and thus avoid the introduction of water into the outgoing steam pipes.

The charging arrangement consists of a horizontal distributing pipe *b*, which is located near the water surface and which extends almost the entire length of the accumulator. To this distributing pipe charging necks or outlets *a* are fastened at equidistant points and dimensioned so that equal quantities of steam can stream through all these outlets. The charging outlets are surrounded by tubular casings *d*, formed to produce diffusion of the steam. These tubular casings extend downward until they almost touch the bot-

tom of the steam engine, which is due to a momentary excess of steam, which pressure is somewhat higher than that which exists in the steam space of the heat accumulator, then the back pressure valve, which is located in this piping, opens and permits the excess of steam to pass towards the heat accumulator. On the other hand, if the steam pressure sinks just a little under the pressure in the steam accumulator, due to the increased withdrawal in the discharge pipe, then the back pressure valve, located in the steam discharge pipe, opens. The arrangement of these two back-pressure valves makes it possible to connect the steam or heat ac-

cumulator in parallel with its steam pipe by means of a single length of pipe, so that only that quantity of steam is allowed to pass through the back-pressure valves and the overflow valves, controlling the overflow of excess steam, as to either reduce or increase the steam production so as to meet the decreased or increased demands for steam. As the largest part of the steam passes by the heat accumulator in this manner, the steam either retains its superheat or loses it only in that proportion as saturated steam is added to it from the heat accumulator in accordance with the demand for steam in the plant.

Pressure Changes in the Heat Accumulator

As has been explained heretofore, definite changes in the water content of the Ruth accumulator correspond to changes in the pressure in the apparatus. Consequently, these pressure differences may be determined by observation of the height of the water in the water column. This water column may moreover be used as a measure of the pressure within the heat accumulator. If it gives a lower reading than the manometer of the accumulator, then it must be refilled. Just a few minutes' study will show that this necessity can arise under certain circumstances. The heat content in the steam, which is removed from the Ruth accumulator, is somewhat variable and on the average it amounts to less than what is in the steam, charged into the apparatus, especially when this steam has first been superheated. Consequently the quantity of steam, that has to be removed under the condition of equal pressure change, is greater and the water level lies at a somewhat lower point than heretofore, when the lower pressure limit, that existed at the outset, is reached again. On the other hand the cooling loss during the discharge, especially when this takes place quickly, is smaller than the heat loss during the charging, due to the fact that the temperature difference is decreased. This has the effect of reducing the difference in the heat content of the charged and discharged steam. Consequently it also has the effect of reducing the sinking of the water level in the water column, so that the occasional refilling of the Ruth accumulator with water need take place only monthly at intervals. This is accomplished with the aid of a water-feed regulating valve. Moreover, when we speak of the complete charging or discharging of the heat accumulator, the variation in the water level, that ensues, amounts

...have a very bad efficiency except when the extraordinary ... is set in.

Installation with Steam Lines of Different Pressures

The case of the installation, in which power requirements and heat requirements must be met through one steam power line which is connected with one or more steam heat lines of different pressures, is of much more importance.

In this case efforts are always made to have the pressure drops between the steam boiler pressure and the pressure or pressures in the apparatus, consuming steam for heating purposes approach the performance of work in the energy producing machines, whether they be steam engines or turbines. The accumulator in this case is connected advantageously to one of the exhaust steam pipes or between two such pipes in such a manner that it can absorb the excess steam from the high pressure line and shut off from the low pressure piping leading from the steam boiler, as soon as the steam demand increases in the high pressure line. Then the entire work of the boiler is available for taking care of the demands in the high pressure steam line. This arrangement presupposes in all cases that the steam consumption in the low pressure line is at least as large as that quantity of steam as that quantity by which the maximum consumption in the high pressure line exceeds the constant steam production. If the latter is designated by the symbol d kilograms per hour, the aforementioned maximum steam consumption by the symbol D , then $D-d$ kilograms per hour at least must be removed from the steam accumulator, if no change is to be made in the boiler house. ($D-D-d$)

Regulation Devices

Special regulating devices are provided at the power-producing machinery and at the overflow valves, which allow the excess of steam to flow towards the heat accumulator and which receive their regulation from either the exhaust steam pipes or the steam lines leading to the turbine nozzles or from the boiler main itself. These regulating devices provide for the automatic co-operation of the power-producing machinery and the machines that utilize the heat in the steam. Figure 6 illustrates a way in which the heat accumulator may be connected up with other apparatus in a paper mill.

The Arca Regulatory System

In case the power-producing machine, which acts as a steam pressure reducing valve, fails to operate or is more or less strongly discharged, there are provided special steam pressure reducing valves, which prevent the steam being fed directly from the boilers to the lines, carrying the steam to the heat consumers, when the power-producing machines are shunted off the steam line. In this case as well the heat accumulator fulfills its purpose of equalizing and improving the operation of the boiler. The pressure reducing and excess pressure valves must operate in a certain series and must be regulated so that they respond to fine differences in pressures. From the standpoint of a single range of pressure regulation for all these valves, it is recommended that all these valves be combined as much as possible at one point, as the installation at points, far separated from one another, is very bad and inconvenient. (Fig. 7 shows the device used to combine all the instruments in one place so that their regulation is comparatively simple).

The actuation of the individual valves is accomplished indirectly, in Sweden the so-called "Arca regulator" is used to bring this about. A diagram of this system of regulation is shown in Fig. 8. The principle of the system is as follows. A bourdon tube with a pneumatic box or a membrane is inserted in the lines, controlled by the excess pressure or pressure reducing valves. The change in the shape of this membrane, which results due to the pressure present in the lines, serves to actuate a needle or flap valve, which then more or less liquid to emerge from the pressure line of a pump or oil pump, which is operated at a speed which is kept

as uniform as possible. Consequently the pressure, which exists in the pressure line, is changed in accordance with the position of the outlet valve, and these differences in pressure now act on a relay, a simple or compound membrane, which moves a small regulating piston. This allows water or oil under pressure to stream out of the same pressure line to the top side of a simple acting power piston or to flow off from that device. The movement which is caused to take place in the power piston in this manner, is finally transmitted to the regulating spindle of the excess pressure or pressure reducing valve through a link provided with a tension weight. Inasmuch as in the presence of several relays all are affected at the same time by the change in pressure in the line



FIG. 7
Regulating Board.

leading from the pumps then the motion, which is induced by the regulatory action, of one or several others, is of such a nature that the regulation of the individual steam lines is always accomplished in the correct manner. The parallel interconnection of the regulating impulse and the regulating movements, which is accomplished in this manner, results therefore in a regulatory action which is extraordinarily sensitive and accurate. Changes in pressure in the pump lines, for example due to a variation in the speed of the pump, are, as may be easily proven, without any influence on the correct actuation of the regulatory valve.

4. The Use of the Heat Accumulator in Paper Mills and Practical Results Obtained in Its Operation

The heat accumulator is indicated for application in all places, where the steam demand is subject to more or less great variation, where the production of steam takes place in an irregular manner, or both conditions exist at one and the same time. The Ruth heat accumulator permits absolutely uniform operation of the boilers with a high efficiency, the transition to industrial boiler systems and to the utilization of the reduction in heat in power-producing machines, and because of its constant preparedness to furnish steam, an increase in the production and an important diminution in the area of heating surface which must be made available in the operation of the boiler.

The chemical industry, the textile and foodstuff industry metallurgical plants and power plants, and paper mills are all subject to the condition of variable steam demand. (Curve sheets are given to show how greatly the demand of steam can vary in paper mills.) The results shown are determined partly by observation and partly by calculation. In paper mills the variation in the steam consumption can be calculated with a degree of accuracy that yields results, which are a very close approximation to the actual

At the same time it is possible to consider increase in the operations or to easily accommodate oneself to the condition that after the heat accumulator has been built into the line the time of cooking can be shortened by a diminution of the time of steaming and of bringing the digester up to pressure, as there is no longer any lack of steam. The steam consumption curve becomes in this way more subject to change, but the steam production remains constant, as in all cases, where the steam consumption is greater than the steam production or vice versa, the heat accumulator springs into the breach and exerts its beneficial action.

Practical Experience with the Ruth Heat Accumulator

(Various diagrams are given in the original article, illustrating actual practical operation of the Ruth heat accumulator and the effects produced by its use in paper mills. These curves are indicative of Swedish practice and experience with this machine. In one case the boilers were fired with wood and with gas. The carbon dioxide in the flue gases was determined both before and after a Ruth heat accumulator had been installed. The variation in the amount of carbon dioxide in the flue gases before the Ruth apparatus was installed was very great, indicating very irregular firing, but after the heat accumulator had been installed, these variations were markedly reduced.)

Other curves are given in the article, showing the effect of the Ruth apparatus on the variation in the temperature and of the steam and in the pressure at the boiler. Without the Ruth apparatus the variation in the boiler pressure was very marked but the operation with the heat accumulator in the installation was very regular. A curve is also given to illustrate just how the pressure within the Ruth heat accumulator varies as the apparatus receives and discharges steam. During the steaming period, when large quantities of steam are removed from the heat accumulator and passed through an open digester filled with wood chips, demands are made upon the Ruth apparatus, due to the sudden load, that could never be met by the boiler itself. The Ruth heat accumulator permits this steaming to be done at a much increased speed, similarly the operation of bringing the mass up to a boil is hastened, so that the time of digestion is reduced by about 20 per cent.

Possibilities in the Discharge of Steam

In the case considered above, there results at one point a reduction in pressure, due to the steaming of the apparatus, amounting to 3.4 atmospheres within a period of 18 minutes. The pressure was reduced from 8.4 to 5.0 atmospheres. When the volume of water in the heat accumulator is approximately 150 cubic meters, the heat accumulator delivers 5,000 kilograms of steam under these conditions or at the rate of 16,700 kilograms of steam per hour. In a curve there is indicated a very abrupt discharge of steam from a heat accumulator. The steam discharge amounts to 33,000 kilograms of steam per hour at a certain point. The heat accumulating apparatus, in this case, has a capacity of only 86 cubic meters and a large steam-discharging water surface of 25.5 square meters. The maximum value of the steam discharge per square meter of water surface is approximately 13,300 kilograms per hour, the average value during the steaming period is about 210 kilograms per hour. The discharge takes place without shock and without noise. It has been proven by experimental investigations that the largest Ruth heat accumulators, which have been built up to the present time, will afford a steam discharge up to a maximum of 100,000 kilograms per hour, which means that within a period of 5 to 10 minutes they can be completely discharged, without the steam becoming moist in any appreciable degree.

Improving and Lowering the Cost of Boiler Operation

It is a fact derived from experimental observation that boilers which operate under the condition of varying load, even though they yield efficiencies of 70 to 80 per cent in the original tests, do not average an efficiency of over 50 to 60 per cent in continuous operation. In contradistinction thereto when the boiler is operated with

the heat accumulator in the steam line, the operating conditions are so regular, as may be seen from the regularity of the firing, of the steam pressure and of the temperature, that they approach those under which the original test was made. It is claimed that there are plants in Sweden, which operate their boilers in conjunction with one or more Ruth heat accumulators and which attain an efficiency of 80 per cent and more with their boilers.

The report that the saving in fuel, which has been attained in many paper mills in that country, which have installed heat accumulators, amount to from 15 to 23 per cent, brought about only through the improvement in the efficiency of the boilers, corroborates this statement. In a period of one to one and one-half years the initial cost of the Ruth heat accumulator has been paid for out of

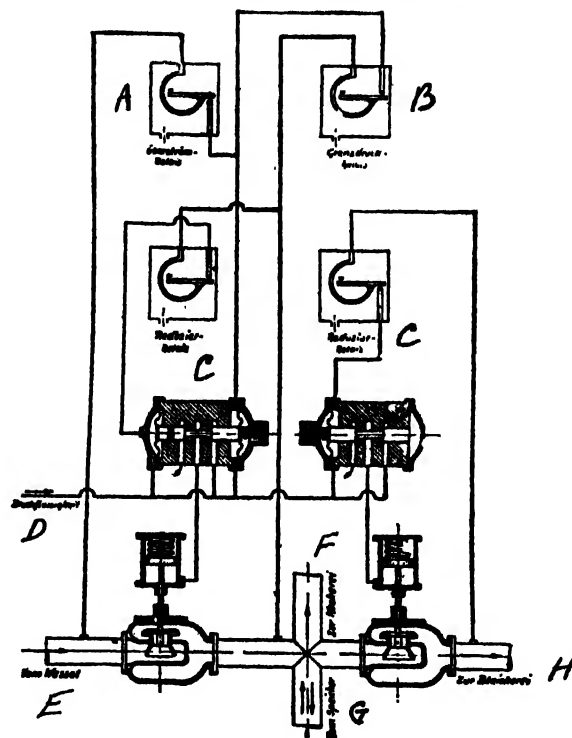


FIG. 8

Air Regulating System. A, Excess Flow Relay; B, Limiting Pressure Relay; C, Reducing Relay; D, Pressure Liquor; E, From Boiler; F, to Digesters; G, to Heat Accumulators; H, to Bleaching Plant.

the increased efficiency and savings in boiler plant operation that it has afforded. One of the best examples of the effectiveness of the Ruth apparatus is to be found in the plant of A. B. Kaukas in Wilmanstrand, Finland. (The author of this article saw this plant in operation). This plant possesses the largest heat accumulator, built up to the present time. The diameter of the apparatus is 5.0 meters, the length 19.5 meters and it has a capacity of 345 cubic meters. The accumulator load is 12,000 kilograms of steam. The plant operates four Babcock and Wilcox boilers, each possessing 393 square meters of heating surface (run by four firemen), while before the heat accumulator was installed 20 fire tube boilers, run by 70 firemen, were required to furnish steam to run the plant. The new installation works continuously with an efficiency of 83 per cent.

Statement by Mr. Dodge

The following statement was made by Philip T. Dodge, president of International Paper Company at annual luncheon of News Print Service Bureau, November 16, 1922.

"Before we part, I think perhaps I should say a word about one thing which we discovered in Europe that I think is of very great importance to every paper manufacturer, of importance in every industry where there is a large and variable steam consumption

They are being rapidly introduced in England, and we visited at least a dozen plants, not only paper plants but other industrial plants where steam was used, introducing what is known as the Vapor or Steam Accumulator. It has been tried on a very small scale in a crude way in one place in this country. It has been highly developed on the other side.

I saw the books of one concern the fuel bills of which have been reduced 15 per cent through the installation of this apparatus.

It is of the most simple character. There is nothing about it but a great tank filled to about nine-tenths of its capacity with water, so thoroughly insulated that it is cold on the outside no matter what the temperature may be on the inside. Whenever they have an excess of steam—when, for instance, in a sulphite plant, you have ceased to use steam in your digesters and your boilers are running on, you simply turn this steam into this great accumulator and the heat is absorbed by the water.

You may build your boiler plant to minimum capacity. You need never bank your fires. Whenever the consumption of steam falls away, you turn the surplus into this accumulator. It means that your steam plant of minimum size can be run constantly day and night and up to its maximum capacity and on the most economic lines. It is a very great thing.

I am going to say without any hesitation we are going to put them into at least one of the International mills at once, and I think into others. The representatives of that equipment are to be in this country soon if they are not already here. Those of you who use steam in variable quantity as between different hours of the night and day or even between different days ought to find this of great value. In one case that steam laid dormant, so to speak, for three weeks, and practically all of it was recovered; there was a loss of only about two per cent. When that thing is presented to you, give it pretty careful consideration, gentlemen."

CURRENT PAPER TRADE LITERATURE

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Properties, Chemistry and Testing of Raw Materials and Finished Products

Paper Making Qualities of Some Indo-Chinese Woods.—*Papier*, xxv, 463-464 (Oct., 1922).—According to Heim and O. Roerich *gao* gives 30% of light brownish red, easy bleaching pulp, which is homogeneous and contains very few non-fibrous elements. The average fiber length is 2 mm, tensile, tearing and crumpling strengths are satisfactory. The pulp is quite suitable for the manufacture of ordinary grades of paper. *Sau* gives 34% of a light yellow unbleached pulp, which is homogeneous and contains but few non-cellulosic cells and vessels. Average fiber length 1.7 mm. The tensile, tearing and crumpling strengths are exceptionally high. The pulp is suitable for the manufacture of ordinary grades of paper. *Vai* gives 40% of light brown, slightly rose-colored, unbleached pulp, which is homogeneous and contains very few non-fibrous elements. The tensile, tearing and crumpling strengths are rather poor. It could be used in admixture with other pulps. *Vang-chung* gives 34% of a light brownish-yellow, easy bleaching pulp which has satisfactory tensile, tearing and crumpling strengths. It can be used either alone for the manufacture of common grades of paper, or in admixture with other pulps.—A. P.-C.

The Chemistry of Wood. V. Results of Analysis of Some American Woods.—G. J. Ritter and L. C. Fleck, Forest Products Lab., Madison, Wis. *J. Ind. Eng. Chem.*, xiv, 1050-1055 (Nov., 1922). Complete analyses are given of the woods of western yellow pine (*Pinus ponderosa*), yellow cedar (*Chama cypariss nootkatensis*), incense cedar (*Libocedrus decurrens*), tanbark oak (*Quercus densiflora*), redwood (heartwood) (*Sequoia sempervirens*), mesquite (*Prosopis juliflora*), balsa (*Ochroma lagopus*), and shell-bark hickory (*Hicoria ovata*); and results previously obtained at the Forest Products Lab. are retabulated along with the new data for purposes of comparison. In the discussion of results the authors show that the alpha-celluloses isolated from the various woods are not the same chemically, as is claimed by some investigators. Comparing the methoxy and lignin contents of redwood and live oak, it appears that the composition of lignin in the two species is uniform from the standpoint of the methoxy content. If this uniformity holds in all woods, then the methoxy not associated with the lignin must vary. It is suggested that this may explain the difference in yields of methanol from hardwoods and softwoods on destructive distillation.—A. P.-C.

Distribution of Methoxy in the Products of Wood Distillation.—L. F. Hawley and S. S. Aiyar, Forest Products Lab., Madison, Wis. *J. Ind. Eng. Chem.*, xiv, 1055-1057 (Nov., 1922).

Methoxy groups in wood are the source of the methanol obtained by destructive distillation, but only 16 to 30% of the methoxy goes to form menthanol. The article describes the search for the other 84 to 70% methoxy in the crude products of distillation of maple, oak and incense cedar. The changes in the distribution of the methoxy when the wood is treated with sodium carbonate or phosphoric acid before distillation are also described.—A. P.-C.

Hydrophyte Cellulose.—*Svensk Pappers Tidning*, xxiv, 459-460 (1921); *Chem. Abs.*, xvi, 4058 (Nov. 20, 1922). The preparation of paper pulp from such hydrophytes as reed, etc., is recommended. Illustrations are given showing the character of the fibers.—A. P.-C.

Andropogons as Paper Making Materials.—Ch. Groud. *Papier*, xxv, 446-449 (Oct., 1922). Results are given of tests carried out at the French School of Papermaking at Grenoble. *Imperata arundinacea* from Indo-China, containing 14% of moisture when air-dry, was charged into a spherical digester in 4 to 5 cm. lengths, slightly washed, steamed for one hour under low pressure, and cooked for seven hours with 13% of caustic soda as a 5° Bé. liquor, under 3 to 3.5 atmospheres. The grass contained 42% of cellulose, and the yield of bleached pulp, using 16% of bleaching powder, was 31%. The paper was of a fine white color, thickness 0.11 mm., weight 80 g. per square meter; breaking length, machine direction 3,166 m., cross direction 2,000 m., average 2,583 m.; bursting strength 1.130 kilos. The cellulose is fine and fibrous, fiber length 1 to 3.5 mm., average 1.8 mm., average diameter 0.01 mm., felting power 1/180. The fibers are regular, cylindrical, with sharp and elongated ends. The lumen is small and the walls fairly thick. There are a few longer and stronger fibers (3 mm. long and 0.012 to 0.015 mm. diameter, and various cells similar to, but smaller than, those found in straw pulp, which are largely eliminated in the washing. The pulp is suitable for the manufacture of fine papers (printing, ledger), either alone, or preferably mixed with wood, rag or bamboo pulps. Leaves (containing a few fragments of stems) of *Andropogon muricatus* were lightly crushed between rolls, put through a straw-cutter, and cooked: (1) with 7% of caustic soda as 4° Bé. liquor under 3 atmospheres, for 4.5 hours, which gave a decidedly greenish material; (2) with a 3° Bé. sulphite liquor, for 4.5 hours, under 3 atmospheres, which gave a light yellow product. The digested material was defibred and bleached with bleaching powder. Yield 35%. The paper obtained was of fairly good quality, white, opaque, but not very strong. The fibers are 1.5 to 2 mm. long, and 0.010 to 0.015 mm. in diameter, felting power 1/150. The fibers are regular, cylindrical, elongated, with fairly thick walls, and lumen about one-third the diameter of the fiber. There are numerous and varied non-fibrous elements, which are largely eliminated in wash-

ing; but the finished pulp still contains about 20%, which accounts for the low strength.—A. P.-C.

Nature, Treatment and Qualities of Straw Pulp.—E. Arnould. *Papier*, xxv, 433-435 (Oct., 1922). Brief general review of the subject.—A. P.-C.

Pulp from Reed (Arundo Phragmites).—H. and C. Branco. Can. patent 224,357, Oct. 3, 1922. The reeds are treated with malt and then fermented, and alcohol and other by-products are recovered. The residue is disintegrated for the production of mechanical pulp or treated with weak caustic soda below 100° C. for the production of chemical pulp.—A. P.-C.

Testing the Degree of Digestion of Wood Pulp.—H. Roschier. *Pappers och Trävaruutidskrift*; *J. Soc. Chem. Ind.*, xli, 746A (Oct. 16, 1922). The rate of reduction of permanganate under standard conditions is proposed as a rapid approximate measure of the degree of digestion of wood pulp and is particularly applicable for mill control. A one-hundredth normal solution of potassium permanganate is most suitable; it must be kept neutral and acidified just before use. Two g. of finely rasped wood pulp, or 6 g. of moist pulp squeezed out in the hand, is weighed and rolled into a loose ball. Fifty cc. of permanganate solution is placed in a 300 to 400 cc. glass-stoppered bottle, 1.6 cc. of normal sulphuric acid added, the ball of pulp is dropped in, the stopper is inserted and a stop-watch is started. The bottle is shaken slowly and uniformly by hand and the liquid is kept under observation by slightly tilting the bottle. Immediately the red color of the permanganate is discharged, the time in seconds is noted. A standard temperature of 20° C. is maintained, as the rate of discharge is greatly influenced by differences in temperature. The following grades have been established: Easy bleaching pulp, 70 sec.; slowly bleaching, 50 to 70; medium strong, 35 to 50; ordinary strong, 25 to 35; very strong and hard, 25. The values have been co-ordinated with the chlorine absorption values determined by Sieber's method.—A. P.-C.

The Theory of Color.—*Leather Trades' Rev.*; *Pulp and Paper*, xx, 973-975 (Nov. 9, 1922). A brief popular discussion of the theory of color, showing more particularly the differences between pigment colors and colored light rays and the blending of primary colors (both pigment and light rays) to make all known colors.—A. P.-C.

Report on Folding Tester.—Helen U. Klely, American Writing Paper Co. *Paper Ind.*, iv, 1129-1131 (Nov., 1922). The author discusses the results obtained from collaborators working on twelve machines (results of the tests not given) and concludes that it seems that if the strips are carefully cut and humidity carefully controlled the folding machine has a distinct value and results from one laboratory should agree very closely with one another. It cannot be concluded that there is any difference between the old folding machines and the new machines now being put out in the United States. It is recommended that the work be continued.—A. P.-C.

Determining the Tensile Strength of Paper.—Raymond Fournier. *Papier*, xxv, 437-440 (Oct., 1922). The author, after briefly discussing the shortcomings of the instrument generally used for measuring the tensile strength of paper (Schopper), advises using a machine which could take much wider test strips, e. g., 15 cm. instead of 15 mm. This would necessitate the use of forces up to about 300 kilos, and Schopper type instruments of this capacity would be too heavy, cumbersome and expensive. The author, therefore, briefly sketches (diagrammatically) a simple and efficient hydraulic type of instrument which he considers suitable, in which the tension is exerted by means of a piston which is displaced by screwing a rod into the cylinder carrying the piston.—A. P.-C.

Saccharification of Cellulose.—P. Budnikow and P. W. Solotarew. *Ber. Polyt. Iwanowo-Wosniessensk* iv, 119-128 (1921); *J. Soc. Chem. Ind.*, xli, 745A (Oct. 16, 1922). In the fermentation of glucose obtained by the action of acid on cellulose it is advantageous not to neutralize completely the excess of acid before addi-

tion of the yeast. By this method 85% of the theoretical amount of alcohol was obtained from paper, but a smaller yield was obtained when caustic soda instead of calcium carbonate was used for neutralizing. The sulphuric acid can be recovered electrolytically with a consumption of about 7.215 kilowatts per kilo of acid recovered. With carbon electrodes there is a slight loss of acid and of glucose.—A. P.-C.

Wood Preparing and Equipment

Strong, Quick Cook, Hemlock Sulphite.—L. E. Smith, Nekoosa-Edwards Paper Company. *Paper Ind.*, iv, 1086-1087 (Nov., 1922); *PAPER TRADE J.*, lxxv, No. 19, 53-54 (Nov. 9, 1922); *Paper Mill*, xlv, No. 44, 1, 4, 6 (Nov. 11, 1922); *Paper*, xxxi, No. 5, 7-9 (Nov. 22, 1922). A description of the precautions which must be taken in order to obtain good results, covering cleaning and barking, chipping, cooking and screening. Figures obtained on chipping tests are given, which show that with proper conditions a proper chip can be made in the chipper without the use of rechipper, crusher, or screen.—A. P.-C.

Waste in the Pulp and Paper Industry.—B. T. McBain, Nekoosa-Edwards Paper Company. *Paper Ind.*, iv, 1085-1086 (Nov., 1922); *PAPER TRADE J.*, lxxv, No. 19, 51-52 (Nov. 9, 1922); *Paper Mill*, xlv, No. 44, 10, 12 (Nov. 11, 1922); *Paper*, xxxi, No. 4, 7-9 (Nov. 15, 1922). Brief sketch of the wastes which occur in the wood yard, wood room, groundwood, sulphite and paper mills.—A. P.-C.

Acid Processes of Pulp Manufacture and Equipment

Fertilizer from Sulphite Waste Liquor.—Zellstoffabrik Waldhof. Eng. patent 179,151, April 1, 1922. A fertilizer is obtained by causing a reaction of sulphite waste liquor with matter adapted to combine with the water of the liquor. Quicklime or a mixture of quicklime and magnesia is suitable. Hot concentrated liquor is preferably used and peat dust may be added to the mixture. The product is ground for use and fertilizing agents such as phosphates or potash salts may be added either before or during grinding.—A. P.-C.

Sulphur Burner.—A. G. Hinzke. Can. patent 218,359, May 9, 1922. Same as U. S. A. patent 1,410,061, March 21, 1922. See this journal, lxxiv, No. 20, 55 (May 18, 1922).—A. P.-C.

Alkaline Processes of Pulp Manufacture and Equipment

Use of Chlorine in the Manufacture of Paper Pulp.—C. Addison de Perdiguer. *Papeterie*, xlv, 866-873 (Oct. 10, 1922). Polemical against Pomilio (See this journal, lxxv, No. 16, 54, Oct. 19, 1922.) The author claims that, owing to the high consumption of chlorine, the Cataldi process is of no interest outside of Italy, where there is a good market for caustic soda with little or no outlet for chlorine; and that the pulp produced by this process is not of a quality suitable for the manufacture of fine papers.—A. P.-C.

Manufacture of Bleached Cellulose.—*World's Paper Trade Rev.*; *Paper Mill*, xlv, No. 42, 48 (Oct. 28, 1922). Brief outline of the DeVains process.—A. P.-C.

Pulp Treatment and Drying—Operation and Equipment

Operation of Flat Diaphragm Screens.—Harry Williamson. *Paper Ind.*, iv, 1071-1074 (Nov., 1922). A description of the proper operation and cleaning of diaphragm screens.—A. P.-C.

Bleaching, Bleach Manufacturing and Equipment

Determination of Available Chlorine in Chlorine Bleaching Compounds.—F. Dienert and F. Wandenbulcke. *Ann. Pals.*, xv, 338-339 (Sept.-Oct., 1922). Dilute 1 cc. of the bleaching solution to 1 liter, add 2 g. of ammonium sulphate, shake, and add a few crystals of potassium iodide and some starch solution. Titrate the liberated iodine with an alkaline arsenic solution, 1 cc. of which is equivalent to 1 mg. of available chlorine. The ammonium sulphate prevents the formation of iodate. The method was compared with

those of Penot, Poncius, and Gay-Lussac, and all of them gave about the same results, Poncius' method always giving slightly higher results than the others. Especially with low chlorine contents, Poncius' method gives high results, depending on the rate of addition of the potassium iodide solution, because the reaction between potassium iodide and potassium iodate does not take place immediately. Penot's method is not suitable for very dilute solutions.—A. P.-C.

Method of Bleaching Pulp.—Geo. M. Trostel. Can. patent 224,290, Oct. 3, 1922. The pulp is collected on a vacuum filter to bring it to a high consistency and is then saturated with bleach liquor at 170 to 180° F., the consistency at this stage being as high as 18 to 20%. Bleaching is usually complete in about 7 to 15 min. The excess of bleach is removed by vacuum and air is drawn through the pulp to facilitate the oxidizing action. The bleaching may be carried out either in one or two stages.—A. P.-C.

Paper Manufacturing and Equipment

Beater Room Efficiency.—Richard Clayton. *Paper Ind.* iv, 1050 (Nov., 1922). Very brief discussion of the importance of keeping beating equipment in good condition, and of the importance of the personal factor in accomplishing this.—A. P.-C.

Removing Coloring Matter from Paper Stock.—E. Angier. Can. patents 224,551, 224,552, Oct. 10, 1922. No. 224,551.—The thoroughly pulped stock is treated, in the proportion of 160 lb. per ton of stock, with a mixture of one-third sodium carbonate (sal soda, $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$) and two-thirds sodium carbonate monohydrate ($\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$) at 130° F. for 20 min. No. 224,552.—The pulped stock is treated, in the proportion of 160 lb. per ton of stock, with a mixture of approximately equal parts of sodium sesquicarbonate ($\text{Na}_2\text{H}_2(\text{CO}_3)_3 \cdot 3\text{H}_2\text{O}$), sodium carbonate (sal soda, $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$), and sodium carbonate monohydrate ($\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$), at 130° F. for 20 min. Slaked lime, borax, and calcium acid sulphide can be used as substitutes.—A. P.-C.

Wear of Paper Machine Wires.—J. M. De Portemont. *Papier* xxv, 435-437 (Oct., 1922). A brief description of the function of warp and filler in paper machine wires, of the more generally used weaves, and of the normal wearing out of a wire.—A. P.-C.

Paper Roll Bushing.—H. L. Mumm. Can. patent 224,613, Oct. 10, 1922. The bushing has an annular enlargement which maintains it in the opening in the roll of paper and thus prevents it from being accidentally lost.—A. P.-C.

Slitter and Transverse Cutter for Impregnated Roofing Paper.—H. A. Cumfer assignor to Guyton and Cumfer Mfg. Co. Can. patent 224,656, Oct. 10, 1922.—A. P.-C.

Machine for Catching Paper from Cutters.—L. La Veck assignor to Simplex Paper Accessories Co., Inc. Can. patent 224,334, Oct. 3, 1922.—A. P.-C.

Manufacture of Millboard from Tanyard Refuse.—A. T. Masterman. Eng. patent 182,884, April 6, 1921. Waste wattle bark or other tanyard refuse is crushed for 20 to 30 min. in an edge-runner in the presence of a solution of sodium carbonate or other alkali, and then after admixture with about 20 to 30% of waste paper pulp, is beaten for 2 hours with water at 45 to 50° C. Engine size and alum, or gelatine alone, are added to the pulp during the beating, and after leaving the beater the pulp is manufactured into board by hand or in machines.—A. P.-C.

Carbon Paper.—S. E. Schuer. U. S. A. patent 1,377,368, May 10, 1921; Can. patent 224,628, Oct. 10, 1922. The paper is coated with a composition consisting of soft soap and soot, and may be suitably smoothed or burnished.—A. P.-C.

The Manufacture of So-Called "Antaimoro" Paper.—Colancon. *Bull. Economique de Madagascar, Papier* xxv, 460-461 (Oct., 1922). A brief description of the method used by the Antaimoro (a Madagascar tribe) at least as early as the middle of the Sixteenth century, for making paper from "avo" ("havoha," "avoho") bark.—A. P.-C.

The Manufacture of Blotting Paper.—E. Arnould. *Papier* xxv, 449-450 (Oct. 1922). Brief notes of a very general nature.—A. P.-C.

List of Abbreviated and Full Titles and of Addresses of the Journals From Which Abstracts Have Been Prepared for This Issue

Ann. Fals.	Annales des Falsifications et des Fraudes. Mr. Filadeau, 42b, rue de Bourgogne, Paris (7 ^e), France.
J. Ind. Eng. Chem.	The Journal of Industrial and Engineering Chemistry. H. E. Howe, 810 Eighteenth St., N. W., Washington, D. C.
J. Soc. Chem. Ind.	Journal of the Society of Chemical Industry. Central House, 46 and 47 Finsbury Square, London, E. C. 2, England.
Paper Ind. ...	The Paper Industry. 356 Monadnock Block, Chicago, Ill.
Paper Mill .	The Paper Mill and Wood Pulp News. L. D. Post, Tribune Building, 154 Nassau St., New York City.
Paper Trade J. "	Paper Trade Journal. 10 East Thirty-Ninth St., New York City.
Papeterie	La Papeterie. 9 Rue Lagrange, Paris (5 ^e), France.
Papier	Le Papier. 16 Rue du Rocher, Paris (8 ^e), France.
Pulp and Paper	Pulp and Paper Magazine of Canada. Gardenvale, Que.
World's Paper Trade Rev	The World's Paper Trade Review. Stonhill and Gillis, 58 Shore Lane, London, E. C. England.

Westinghouse Achievements in Paper

In a review of engineering achievements by the Westinghouse Electric and Manufacturing Company, by H. P. Cope, assistant director of engineering. The following is mentioned regarding paper:

"Important progress has been made in the improvements and simplification of the control and regulating equipment used for sectional paper machine drive. These equipments have fully proved their great value to the paper industry during the year and others are in process of construction.

"A new system of paper calender drive and control has been perfected, involving the application of the company's new commutator type frequency changer. Paper calenders in the past have been driven by one main motor, usually of the wound rotor type, with a small motor for threading in. Heretofore, the combination of these two motors required reduction gear units, gear shifts, friction clutches, etc. to make possible the connecting of either one or the other of the motors to the calender and in other instances, an adjustable speed direct-current motor and an adjustable voltage DC generator for providing both the threading in and the operating speeds. Both of these methods required expensive equipments which have now been greatly simplified, as the new system Westinghouse engineers have developed simply involves the use of the wound rotor type induction motor with a standard frequency bus from which the motor operates under production speed and a low frequency bus of about 6 cycles supplied by the frequency changer on which the motor operates when threading in. This equipment also gives a very smooth acceleration with a uniform threading in speed."

Canada May Export Soapstone

Consul Dudley C. Dwyer, Fort William, Ont., has forwarded to the Iron and Steel Division of the Department of Commerce an announcement of the organization, with a capital of \$500,000 and with head office at Toronto, of the Wabigoon Soapstone Co., Ltd., to mine soapstone in the Wabigoon district which is located about 200 miles northwest of Fort William.

The company is said to own one of the largest soapstone deposits known and it is claimed to be the only deposit in Canada that can be worked commercially. It is believed that this deposit can be profitably worked to supply not only the Canadian demand but also for export. Samples of the soapstone are reported to be of a greenish color, easily worked and of excellent quality.

The development of the industry will be of interest to the pulp and paper companies who use this stone for lining kraft mill furnaces and pulp digestors.

PLANS OF THE COMMITTEE ON ABSTRACTS AND BIBLIOGRAPHY, T. A. P. P. I.

BY CLARENCE J. WEST, CHAIRMAN.

At the fall meeting of T. A. P. P. I., the Executive Committee voted to combine the Committees on Abstracts and Bibliography because of the closely allied interests of the two committees. After a careful survey of the field and consultation with various members of the Association, your chairman wishes to present the following outline and plans of the work of the new committee.

In so doing it should be remembered that there are two fundamental factors to be considered. The first is that the abstracts are for information and reference purposes; an article which appears in the abstract section should have a definite relation to pulp and paper manufacture. Sufficient data should be given to indicate the nature of the article, but full details cannot be expected. These can be obtained through the chairman of the committee.

The second, and equally important, factor is that the abstracts should be self supporting. Because this is not true at present, a certain modification of the existing plan is desirable. If, at a later date, the returns justify expansion, this can easily be carried out. For the present, therefore, it is proposed to reduce to a minimum abstracts relating to forestry, metallurgy, fuels, power, &c., both as regards magazine articles and patents. It is believed that the engineer will secure this information more completely through his engineering magazines than we can hope to give it to him.

Abstract To Be Handled

The following magazine will be regularly abstracted: *Boxboard, Canadian Patents, Carbon Age, Cellulosechemie, Chemical and Metallurgical Engineering, Chemiker Zeitung, Chimie et Industrie, China Clay Trade Review, Commerce Reports, English Patents, French Patents, Fiber Containers, German Patents, L'Industria della Carta delle Graphiche, Japan Patents, Journal of Industrial and Engineering Chemistry, Journal of the Society of Dyers and Colorists, Journal of the Society of Chemical Industry, Mitteilungen aus dem königlichen Materialprüfungsamt zu Berlin, Le Moniteur de la Papeterie Belge, Le Moniteur de la Papeterie Francaise, Paper Mill and Wood Pulp News, Paper Maker and British Paper Trade Journal, Paper Makers' Monthly Journal, The Paper Industry, PAPER TRADE JOURNAL, Papier Industri, Papier-Journalen, La Papeterie, Le Papier, Der Papier-Fabrikant, Paper Container, Paper Making, Proceedings of the American Society for Testing Materials, Pulp and Paper Magazine of Canada, La Revue Universelle de la Papeterie, Svensk Pappers-Tidning, Swedish Patents, United States Paper Maker, United States Patents, World's Paper Trade Review, Wochenblatt für Papierfabrikation, Zeitschrift für angewandte Chemie, Zellstoff und Papier.*

Other Material of Value to the Industry

Other material of value to the industry may be obtained by checking Chemical Abstracts, *The Journal of the Society of Chemical Industry*, etc.

Insofar as possible abstractors will be assigned definite magazines. They will be requested to abstract all original material. Reprinted material will be abstracted only if the magazine from which the article is taken is not covered by the above list.

Because of the fact that articles in any one language are usually published in two or more magazines of the country in question, assignment of magazines will, in general, be by language or country. That is, all French magazines will be covered by one man; all German magazines by another, etc.

The greatest difficulty will be met in the case of American and English magazines. Abstractors in charge of these magazines will

in general be able to distinguish English and American articles and thus avoid duplication.

It is desirable that references to all the places of publication of a given article be indicated in the abstract. Additional information will be added by the chairman of the committee. If this plan does not prove satisfactory, a system of assignments will be worked out by the chairman.

Translations of foreign articles into English should be reported by title and magazine reference only, with cross reference to abstract of the original article. It is also desirable that translation of Swedish articles into French or German be reported in the same way, but not of French into German, or *vice versa*; English into French or German, etc. That is, the abstracts are intended primarily for American use.

Other abstracts journals will be checked by the chairman of the committee. This will catch articles in miscellaneous journals not covered by regular abstractors.

All abstracts will be forwarded to the chairman of the committee who will edit and classify them for publication. If possible the field of paper making will be divided into four approximately equal sections, one section being run each week. This will cover the field each month and will make it easier for readers to find a given section or field of papermaking literature.

Index for Six Month Period

An index to all abstracts published during each six-month period (covered by a volume of *PAPER TRADE JOURNAL*) will be prepared and published about a month after the close of each period. This will give ready accessibility to all paper making literature.

The plans of the bibliographic work will be continued as heretofore. Each year a classified bibliography will be prepared covering all the papermaking literature of that year. This will appear early in the following year, preferably in the Convention Number of the *PAPER TRADE JOURNAL* and later in the *Technical Association Papers*. Beginning with 1923, a classified bibliography will appear each month in the Technical Association Section. This will render available foreign material within six weeks of its appearance.

The committee feels that the most important work at the present time is a complete index of all the past papermaking literature. This is being prepared, but the amount of time involved necessarily makes the task a time-consuming one, and no promise can be made as to the date of its completion. Meanwhile special bibliographies will appear from time to time. Those under way at present are: Beating, Electricity in the pulp and paper industry, Check list of paper periodicals, Pulp-paper testing, Chemical control in the paper industry.

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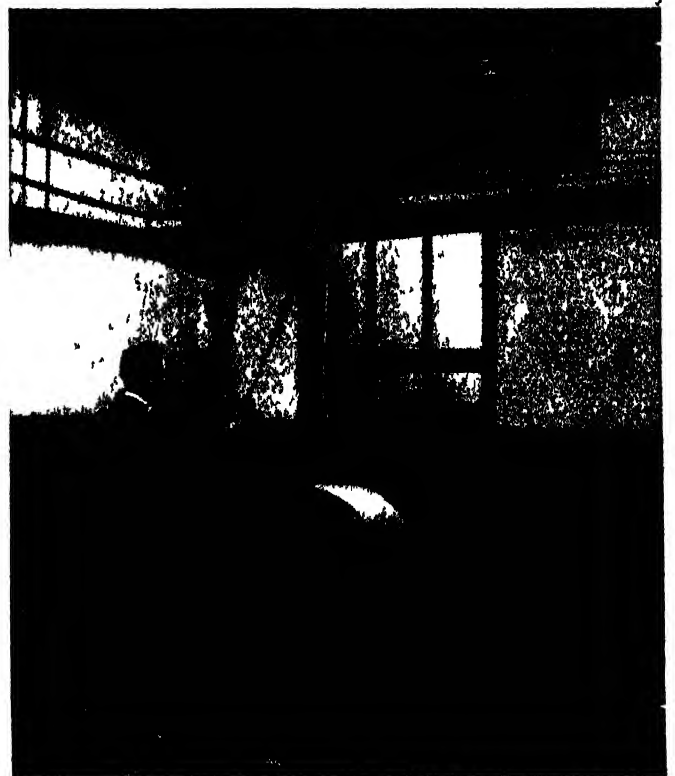
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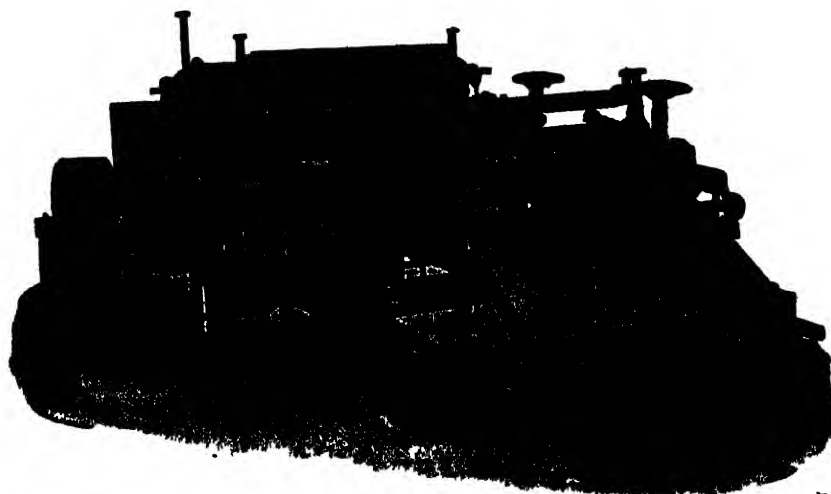


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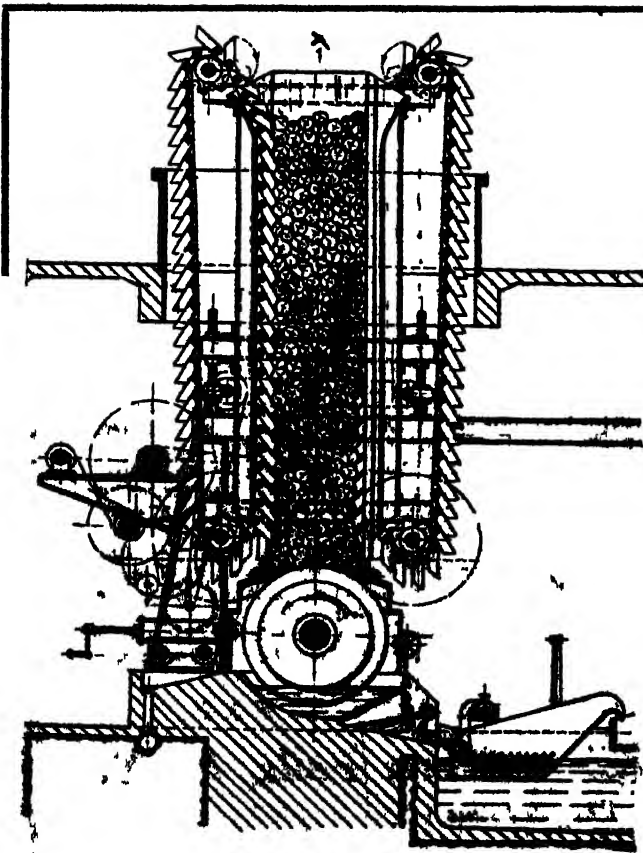
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A. W. Fenton, Inc., by same, 25 bls. cotton waste.

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Katzenstein & Keene, Inc., Janus, Marseilles, 268 bls. rags.

E. J. Keller Co., Inc., by same, 193 bls. rags.

American Wood Pulp Corp., by same, 723 bls. rags.

Albion Mills, Barbadian, London, 14 bls. rags.

M. O'Meara Co., Ryndam, Rotterdam, 159 bls. picker waste.

W. Hughes & Co., Inc., by same, 251 bls. cotton waste.

Ladenburg, Thalman & Co., Ryndam, Rotterdam, 480 bls. paper stock.

Royal Waste Mfg. Co., by same, 29 bls. cotton waste.

Albion Mills, Antonia, Liverpool, 28 bls. rags.

Salomon Bros. & Co., Michigan, Antwerp, 165 bls. flax waste.

Salomon Bros. & Co., Nebraskan, Kobe, 100 bls. thread waste.

American Wood Pulp Corp., Crissfield, Antwerp, 593 bls. rags.

E. Butterworth & Co., Inc., by same, 91 bls. bagging.

Salomon Bros. & Co., by same, 47 bls. rags.

S. Silberman, by same, 236 bls. rags.

P. Berlowitz, by same, 47 bls. rags.

E. J. Keller Co., Inc., by same, 138 bls. bagging.

E. J. Keller Co., Inc., by same, 8 bls. flax waste.

Brown Bros. & Co., by same, 69 bls. rags.

R. F. Downing & Co., by same, 81 bls. bagging.

OLD ROPE

E. J. Keller Co., Inc., Hambleton Range, Leith, 87 coils.

Wilkinson Bros. & Co., Inc., by same, 90 coils.

Wilkinson Bros. & Co., Inc., Carlier, Antwerp, 162 coils.

Katzenstein & Keene, Inc., Columbia, Glasgow, 62 coils.

M. Walfer & Co., Tolna, Havana, 7 coils.

Brown Bros. & Co., Lepanto, Newcastle, 107 coils.

Brown Bros. & Co., Gaasterdyk, Rotterdam, 84 coils.

Equitable Trust Co., by same, 119 coils.
 Chemical Nat'l Bank, Pittsburgh, Bremen, 79 coils.

Old Colony Trust Co., Janus, Genoa, 159 coils.
 Brown Bros. & Co., Michigan, Antwerp, 101 coils.

Brown Bros. & Co., Marengo, Hull, 40 coils.

Wilkinson Bros. & Co., Inc., by same, 180 coils.

CASEIN

T. M. Duche & Sons, Rio Grande, Buenos Aires, 1,084 bags.

Kalbfleisch Corp., W. World, Buenos Aires, 1,835 bags.

Atterbury Bros., Vanban, Buenos Aires, 600 bags.

A. Klipstein & Co., by same, 417 bags.

WOOD PULP

E. J. Keller Co., Inc., Eastside, Esmirk, 1,000 bls.

Nat'l City Bank, Eastside, Sundsvall, 3,600 bls, 600 tons.

R. F. Hammond, by same, 4,200 bls, 700 tons.

Johannesson, Wales & Sparre, Inc., Eastside, Harnokand, 4,400 bls.

Johannesson, Wales & Sparre, Inc., Pallas, Skutskar, 2,625 bls, 532 tons.

Scandinavian-American Trading Co., by same, 2,125 bls, 277 tons.

A. I. Pagel Co., Inc., by same, 12,250 bls., 1,979 tons.

Pulkley, Dunton & Co., by same, 750 bls., 152 tons.

Bulkley, Dunton & Co., Seydlitz, Bremen, 3225 bls.

Bulkley, Dunton & Co., Pres. Roosevelt, Bremen, 1,000 bls., 205 tons.

R. F. Hammond, by same, 2,400 bls., 400 tons.

American Wood Pulp Corp., Mt. Clay, Hamburg, 775 bls., 156 tons.

Castle, Gotthel & Overton, Gaasterdyk, Rotterdam, 792 bls.

H. Hollesen, Orbita, Hamburg, 1,550 bls.

WOOD FLOUR

A. Kramer & Co., Orbita, Hamburg, 1,823 bags.

The Hansa Co., by same, 2,100 bags.

BALTIMORE IMPORTS

WEEK ENDING DECEMBER 16, 1922

M. O'Meara Co., Michigan, Hamburg, 401 rolls news print.

H. Reeve Angel & Co., Inc., by same, 91 bls. print paper.

Gerhard & Hev, by same, 56 pgs. crepe paper.

Wood Pulp Trading Co., Ltd., Iddefjord, Kristiania, 5,000 bls. wood pulp.

M. Gottesman & Co., Inc., Leersum, Kallers, 1,270 bls. wood pulp.

H. Hollesen, Michigan, Hamburg, 800 bls. wood pulp.

R. F. Hammond, Trolleholm, Gothenburg, 1,000 bls., 200 tons wood pulp.

E. J. Keller Co., Inc., Tyne Marn, Kopelman, 7,803 bls. wood pulp.

E. J. Keller Co., Inc., Ala, Rotterdam, 743 bls. rags.

E. J. Keller Co., Inc., Breedyk, Rotterdam, 323 bls. rags.

Salomon Bros. & Co., Sinastra, Hamburg, 381 bls. rags.

Castle, Gotthel & Ocerton, Michigan, Hamburg, 200 bls. rags.

S. Birkenstein Son, by same, 385 bls. rags.

The Congoleum Co., Michigan, Antwerp, 457 bls. rags.

Old Colony Trust Co., by same, 78 coils old rope.

BOSTON IMPORTS

WEEK ENDING DECEMBER 16, 1922

Johannesson, Wales & Sparre, Inc., Eastside, Harnokand, 66,000 bls. wood pulp.

R. F. Hammond, Naruega, Christiania, 250 bls., 50 tons wood pulp.

R. F. Hammond, Hellenic, Gothenburg, 500 bls., 100 tons wood pulp.

M. Gottesman & Co., Inc., Dallas, Sundsvall, 1,250 bls. wood pulp.

M. Gottesman & Co., Inc., Naruega, Christiania, 3,250 bls. wood pulp.

Salomon Bros. & Co., West Kebar, Hamburg, 46 bls. rags.

Salomon Bros. & Co., Gattymore, Glasgow, 187 bls. flax waste.

T. M. Duche & Sons, Rio Grande, Buenos Aires, 417 bags casein.

J. A. & W. Bird & Sons, Eastern Sea, Melbourne, 1,000 bags casein.

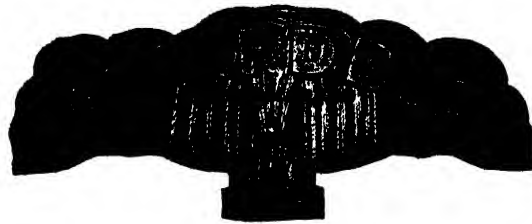
(Continued on page 68)

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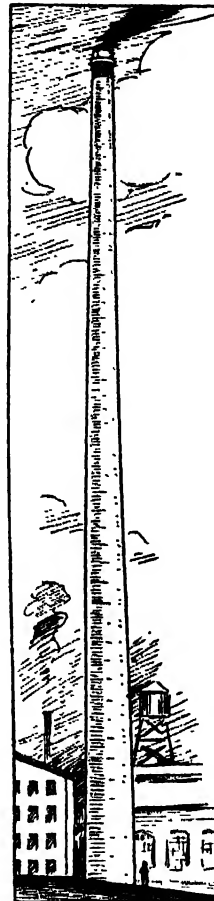
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ribbed, rock rooted, the
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just be good folks to do
business with," the latch
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New York Market Review

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, DECEMBER 19, 1922.

The tone which prevailed throughout the past week in New York's paper and pulp markets was, for the most part, a quiet one. No alarm was expressed over the softening price tendency as the general easiness was almost wholly attributable to the inventory and repair season and the usual relaxation which precedes the Christmas holidays.

A slight improvement in demand was evidenced in book paper circles during the past week, but this was traced to the unusually heavy holiday demand and numerous fill-in orders to tide dealers over. News print continued very active, strengthening even over the preceding week, and mills were crowded to capacity. Chemical pulps continued to ease off in tone although no further price drops were recorded. Ground wood has held in an exceptionally firm position and the water scarcity in grinding regions has given this market a bullish aspect despite the time of year and general disinclination on the part of mills to stock up before January.

News print producers are now beginning to look back with justifiable pride upon their record-breaking production during the current year and, in view of the fact that the majority of them are covered on contract for at least the first quarter of 1923, they are looking to the new year for an unprecedented volume of business. Fundamental conditions have never been brighter in this field and as compared with December, 1922, the news print industry is confronted with infinitely greater possibilities in the year to come.

The book paper market retaliated last week for the easing up which had characterized it in the few weeks preceding by consummating a goodly volume of spot business. This would indicate that fundamental conditions in this market are sound and that the depression which is making itself felt in various channels of the paper trade is wholly a seasonal one. The demand for book paper for export continued to be very light.

Retail trade in fine papers of all grades has been very lively throughout the pre-holiday period, and this has been reflected in the diminishing stocks of jobbers and subsequent fill-in orders to mills. Fine paper dealers have been reluctant to stock up to any great extent until Christmas inventories could have been taken, but it is believed that by January 15 the normal flow of business will have been resumed and under more auspicious conditions than have prevailed in many months.

Tissues have strengthened their position slightly although the current demand is of a hand-to-mouth character. Mills are finding less difficulties in production and transportation that have existed in the past two months and it is believed that with the resumption of a healthy demand from the consuming trade business will flourish. Cars are now available in greater quantities, both for shipment of raw materials and the finished product, and when grinding conditions are again normal in regions producing mechanical pulp, two of the greatest obstacles to progress in this market will have been removed.

While kraft imports show no great decrease in volume, the bulk of these are being applied to contracts. Domestic production has lightened somewhat in anticipation of inventory period and demand has sagged to a certain extent. However, up to December 1 the wrapping paper market was in an exceptionally firm position, with consumption running at a lively clip and domestic mills operating close to capacity to cover the demand. This condition, it is generally believed, will return when the buying for the new year sets in.

As evidence of the fact that the depression in the board market, which was noted week before last as a result of cancellations following a dropping off in chemical pulp prices, was an artificial one, considerable activity was reported in last week's trade and prices exhibited a steadying tendency. It is not believed that any further drops will take place before the post-holiday buying period

arrives, at which time the board market as well as the chemical pulp market should revive their former strength.

Mechanical Pulp

Consumption of ground wood has continued to hold prices in this market very firm, and low water conditions in grinding regions has been accountable for a steady stiffening in the tone of the market as well as in quoted prices. Prime spruce ground wood for immediate shipment has been quoted at prices ranging upwards of \$44 per ton, although a range of \$40 to \$44 would include the bulk of transactions. The news print industry has been draining the available supplies of this commodity as fast as it has been produced, leaving a very limited supply of mechanical pulp on the domestic market. Owing to the fact no immediate relief in grinding conditions is in sight and the lack of evidence of a cessation in demand, prices in this market are not expected to weaken over the holidays.

Chemical Pulp

No further price drops have been reported during the last week's transactions in the chemical pulp market over those of the week before, and importers have enjoyed a fair volume of scattered business from needy consumers. From all appearances the effort to force sales despite the season of the year has been abandoned and if this is the case it is believed that no further declines in pulp values will be recorded during the inventory period. The undertone of the market is still shaky, but the outlook is much brighter than it was a week ago when many grades of the imported fiber suffered sharp price declines and this was accompanied by cancellations further along the line.

Old Rope and Bagging

Domestic grades of old rope have been moving to consumers with fair regularity and in satisfactory volume although stimulus is lacking in demand. Prices continue steady on domestic offerings, while imports have fallen off perceptibly.

A scanty demand continues to hold the tone of the bagging market below normal and although no actual price drops have occurred during the last two weeks, transactions have not been on a large enough scale to make this a promising indication. No. 1 scrap bagging has continued to move to tissue manufacturers in light amounts, while roofing bagging has remained in its rut of the past two months. A general revival of activity is looked forward to by both old rope and bagging dealers with the coming of the new year.

Waste Paper

The chief feature of the waste paper market of the past week was the advance in price of folded news. This renaissance in the lower grades coming at a season when buying is usually very lax would indicate that the slump in the waste paper market is over and that a period of brisk activity may be expected when the buying for the new year once begins. Other grades have maintained a fairly firm position and as yet no price lowerings have been reported. Shavings are still easy, as are other listings of high quality, but the downward trend of prices appears to have halted definitely.

Rags

A fair demand is keeping the domestic rag market in the running, but that of roofing felt manufacturers is slightly better than the call from the paper manufacturing trade. White rags are quite firm, although the bulk of business is centered about the completion of old contracts. Blues have been less active, while specialty grades have had considerable turnover in recent weeks. Rag importations are still an insignificant factor in the market owing to the slack consuming demand. Better times are in sight, in the estimation of dealers, after January 1.

Twine

The twine market in and around New York is now contending with the general seasonal inertia as well as the "backlash" from which it has suffered as a result of light demand.

Market Quotations

Paper Company Securities

New York Stock Exchange closing quotations December 19, 1922:

	BID	ASKED
American Writing Paper Company, pref.....	28	29
International Paper Company, com.....	51 1/4	52
International Paper Company, pref., stamped.....	72	75
Union Bag & Paper Corporation.....	65	68

Paper

F. o. b. Mill	
Ledgers	11.00 @ 38.00
Bonds	9.00 @ 55.00

Writings—	
Extra Superfine.....	16.00 @ 35.00
Superfine	14.00 @ 30.00
Tub Sized	10.00 @ 15.00
Engine Sized	8.50 @ 11.00

News—f. o. b. Mill—	
Rolls, contract	3.85 @ 4.00
Rolls, transit	4.00 @ —
Sheets	4.00 @ —
Side Runs	3.25 @ 3.50

Book, Cased—f. o. b. Mill—	
S. & S. C.	7.50 @ 12.00
M. F.	7.00 @ 10.00
Coated and Kn- amel	9.00 @ 14.00
Lithograph	9.00 @ 14.00

Timenes—f. o. b. Mill—	
White, No. 1 .....	.95 @ 1.10
Colored	1.25 @ 2.50
Anti-Tarnish	1.75 @ 2.25
Silver Tissue	— @ —
Manila .....	.90 @ 1.00

Kraft—f. o. b. Mill—	
No. 1 Domestic	7.00 @ 7.50
No. 2 Domestic	6.50 @ 6.75
Imported	6.50 @ 7.00
Screenings	3.15 @ 3.40

Manila—	
No. 1 Jute	8.50 @ 9.00
No. 2 Jute	7.75 @ 8.50
No. 1 Wood	4.50 @ 5.50
No. 2 Wood	4.00 @ 4.50
Butchers	4.25 @ 4.75

Fiber Papers—	
No. 1 Fiber	6.00 @ 6.25
No. 2 Fiber	5.25 @ 5.50
Common Bogus	3.50 @ —
Card Middles	4.00 @ 5.00

Boards—per ton—	
News	60.00 @ 65.00
Straw	— @ —
Chip	35.00 @ 60.00
Binders' Board	75.00 @ 85.00
Sgt. Mla. Li. Chip	65.00 @ 70.00
Wood Pulp	— @ —
Container	— @ —

Wax Paper—	
Self Sealing White 28 and 30 lb. basis	11.00 @ 12.00
Waxed Tissue	1.60 @ 1.80

Glassine—	
Bleached, basis 25 lbs.	15.00 nominal
Bleached, basis 20 lbs.	13.00 nominal

Papermakers' Felts, per ton—	
Dry	75.00 @ 85.00
Saturated	65.00 @ 75.00
Sheathing Paper, per ton—	
Rosin Sized (red and gray, 30 lbs. per 500 sq. ft.)	55.00 @ 65.00

Mechanical Pulp

(Ex-Deck)

No. 1 Imported	40.00 @ 45.00
No. 1 Domestic	40.00 @ 44.00
For immediate ship- ment	45.00 @ —

Chemical Pulp

(Ex-Deck, Atlantic Ports.)

Sulphite (Imported)—	
Bleached	4.25 @ 4.75
Easy Bleaching	3.00 @ 3.25
No. 1 strong un- bleached	2.80 @ 3.00
No. 2 strong un- bleached	2.65 @ 3.00
No. 1 Kraft	2.75 @ 2.85

Sulphate—	
Bleached	4.00 @ 4.25
(F. o. b. Pulp Mill.)	
Sulphite (Domestic)—	
Bleached	4.50 @ 5.00
Strong unbleached	2.90 @ 3.20
No. 2 strong un- bleached	2.00 @ 2.25
No. 1 Kraft	2.00 @ 2.25
No. 2 Kraft	2.00 @ 2.25
No. 3 Kraft	2.00 @ 2.25
No. 4 Kraft	2.00 @ 2.25
No. 5 Kraft	2.00 @ 2.25
No. 6 Kraft	2.00 @ 2.25
No. 7 Kraft	2.00 @ 2.25
No. 8 Kraft	2.00 @ 2.25
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No. 85 Kraft	2.00 @ 2.25
No. 86 Kraft	2.00 @ 2.25
No. 87 Kraft	2.00 @ 2.25
No. 88 Kraft	2.00 @ 2.25
No. 89 Kraft	2.00 @ 2.25
No. 90 Kraft	2.00 @ 2.25
No. 91 Kraft	2.00 @ 2.25
No. 92 Kraft	2.00 @ 2.25
No. 93 Kraft	2.00 @ 2.25
No. 94 Kraft	2.00 @ 2.25
No. 95 Kraft	2.00 @ 2.25
No. 96 Kraft	2.00 @ 2.25
No. 97 Kraft	2.00 @ 2.25
No. 98 Kraft	2.00 @ 2.25
No. 99 Kraft	2.00 @ 2.25
No. 100 Kraft	2.00 @ 2.25

Kraft (Domestic)	2.85 @ 3.10
Soda Bleached	4.35 @ 4.50

Domestic Rags

Prices to Mill, f. o. b. N. Y.

Shirt Cuttings—	
New White, No. 1	11.50 @ 12.00
New White, No. 2	6.50 @ 7.00
Silicas, No. 1	7.50 @ 8.00
New Unbleached	9.00 @ 9.50
Washables	4.50 @ 5.00
Fancy	6.25 @ 6.75

Cotton—according to Grades—	
Blue Overall	5.50 @ 6.00
New Blue	4.75 @ 5.00
New Black Soft	5.50 @ 6.00
New Light Sec- onds	2.75 @ 3.00

O. D. Khaki Cut- tings	4.00 @ 4.50
Men's Corduroy	3.00 @ 3.25
New Canvas	7.00 @ 7.25
New Black Mixed	2.50 @ 2.75

White, No. 1—	
Repacked	6.50 @ 6.75
Miscellaneous	5.50 @ 5.75
White, No. 2—	
Repacked	3.25 @ 3.50
Miscellaneous	5.50 @ 5.75
St. Soiled White	1.75 @ 1.85

Thirds and Blues—	
Repacked	1.90 @ 2.10
Miscellaneous	1.50 @ 1.60
Black stockings	2.90 @ 3.25

Roofing Rags—	
Cloth Strippings	1.10 @ 1.20
No. 1	1.10 @ 1.20
No. 2	1.00 @ 1.10
No. 3 .....	.80 @ .90
No. 4 .....	.80 @ .90
No. 5A	1.00 @ 1.10

Foreign Rags	
New Light Silicas	6.00 nominal
Light Flannelettes	6.75 nominal
Unbleached Cottons	7.50 nominal
New White Cut- tings	9.50 nominal
New Light Oxfords	6.00 nominal
New Light Prints	4.50 nominal
New Mixed Cut- tings	2.00 @ 2.50
New Dark Cuttings	1.90 @ 2.10
No. 1 White Linens	9.00 @ 11.00
No. 2 White Linens	6.50 nominal
No. 3 White Linens	5.00 nominal
No. 4 White Linens	3.50 nominal

Old Extra Light Prints	2.00 nominal
Ord. Light Prints	1.75 nominal
Med. Light Prints	1.50 nominal
Dutch Blue Cottons	1.85 nominal
German Blue Cot- tons	1.60 @ 1.70
Ger. Blue Linens	3.50 nominal
Checks and Blues	1.80 nominal
Dark Cottons	1.30 @ 1.35
Shoppery	1.00 @ 1.05
French Blues	1.75 @ 2.00

Bagging	
Prices to Mill f. o. b. N. Y.	
Gunny No. 1—	
Foreign	1.00 @ 1.10
Domestic	1.00 @ 1.10
Wool, Tares, light	1.45 @ 1.55
Wool, Tares, heavy	1.40 @ 1.50
Bright Bagging	1.05 @ 1.20
No. 1 Scrap	1.05 @ 1.20
Sound Bagging .....	.85 @ .95
Manila Rope—	
Foreign	5.75 @ 6.00
Domestic	6.00 @ 6.25
New Bu. Cut	2.25 @ 2.45
Hessian Jute Threads	2.25 @ 2.50
Foreign	2.25 @ 2.50
Domestic	2.20 @ 2.40
Mixed Strings .....	.90 @ 1.00

Twines	
Prices to Mill f. o. b. N. Y.	
No. 1 .....	.35 @ .37
No. 2 .....	.31 @ .33
No. 3 .....	.37 @ .39

India, No. 6 basis—	
Light .....	.20 @ .21
Dark .....	.19 @ .20
B. C., 18 basis .....	.41 @ .42
A. B. Italian, 18 basis .....	.51 @ .61

Finished Jute—	
Dark, 18 basis .....	.29 @ .30
Light, 18 basis .....	.26 @ .27
Jute Wrapping, 3-6 ply .....	.23 @ .24
No. 1 .....	.21 @ .22
No. 2 .....	.21 @ .22

Tube Rope—	
4-ply and larger .....	.15 @ .17
Fine Tube Yarn—	
3-ply and larger .....	.19 @ .21
4-ply .....	.20 @ .22
3-ply .....	.20 @ .22

Unfinished India—	
Basis .....	.16 @ .17
Paper Makers Twine	
Balls .....	.13 @ .15
Box Twine, 2-3 ply .....	.18 @ .19
Jute Rope .....	.17 @ .20
Amer. Hemp, 6 .....	.33 @ .35

Sisal Hay Rope—	
No. 1 Basis .....	.15 @ .17
No. 2 Basis .....	.13 @ .15
Sisal Lath Yarn—	
No. 1 .....	.14 @ .15
No. 2 .....	.11 @ .13
Manila Rope .....	.18 @ .19

Old Waste Papers	
(F. o. b. New York)	
Shavings—	
Hard, White, No. 1	4.20 @ 4.40
Hard, White, No. 2	3.75 @ 4.15
Soft, White, No. 1	3.75 @ 3.90

Flat Stock—	
Stitchless	2.65 @ 2.70
Over Issue Mag.	2.75 @ 2.75
Solid Flat Book	2.45 @ 2.50
Crumpled No. 1	2.10 @ 2.15
Solid Book Ledger	3.00 @ 3.25
Ledger Stock	2.70 @ 2.80
New B. B. Chips	1.00 @ 1.10

Manila—	
New Env. Cut	2.50 @ 2.60
New Cut No. 1	2.00 @ 2.10
Extra No. 1 Old	1.80 @ 1.90
Print	1.55 @ 1.65
Container Board	1.25 @ 1.35
Bogus Wrapper	1.10 @ 1.20

Old Krafts, ma- chine compressed	
Bales	2.15 @ 2.25
News—	
No. 1 White News	2.00 @ 2.15
Strictly Overseas	1.20 @ 1.35
Strictly Folded	1.15 @ 1.30
No. 1 Mixed Paper .....	.75 @ .90
Common Paper .....	.60 @ .70

CHICAGO

[FROM OUR REGULAR CORRESPONDENT]

Paper	
F. o. b. Mill	
All Rag Bond	35 @ 40
No. 1 Rag Bond	30 @ 35
No. 2 Rag Bond	18 @ 25
Water Marked Sul- phite	10 @ 14
Sulphite Bond	9 1/4 @ 12
Sulphite Ledger	12 @ 14
Superfine Writing	18 @ 24
No. 1 Fine Writing	14 @ 22
No. 2 Fine Writing	12 @ 20
No. 3 Fine Writing	9 @ 12
No. 1 M. F. Book	6 1/2 @ 7
No. 1 S. & S. C. Book	7 @ 7 1/2
Coated Book	8 1/4 @ 9
Coated Label	8 1/4 @ 8 1/4
News—Rolls mill	4 @ 4 1/2
News—Sheets, mill	4 1/4 @ 4 1/4
No. 1 Manila	4 1/2 @ 6
No. 1 Fiber	5 1/4 @ 5 1/4
No. 2 Manila	4 1/2 @ 5
Butchers' Manila	4 @ 4 1/2
No. 1 Kraft	7 @ 7 1/2
No. 2 Kraft	6 1/4 @ 7
Wood Tag Boards	4 1/2 @ 5
Screenings	3 @ 4

Boards, per ton—	
Plain Chip	— @ —
Solid Chip	— @ —
Manila Lined Chip	— @ —
Container Line—	
85 Test	— @ —
100 Test	— @ —

All quotations withdrawn	
--------------------------------	--

Imports and Exports of Paper and Paper Stock

(Continued from page 64)

CHARLESTON IMPORTS

WEEK ENDING DECEMBER 16, 1922

Castle, Gotthel & Overton, Fluor Spar, Rotterdam, 239 bla. rags.
Katzenstein & Keene, Inc., Tulsa, Glasgow, 139 bls. bagging

PHILADELPHIA IMPORTS

WEEK ENDING DECEMBER 16, 1922

Castle, Gotthel & Overton, Sonora, Bordeaux, 76 bales rags.
Castle, Gotthel & Overton, Elmsport, Rotterdam, 906 bales rags.
Castle, Gotthel & Overton, Ville d'Yboute, Marseilles, 281 bales rags.
Castle, Gotthel & Overton, Cressfield, Antwerp, 465 bales rags.

Corn Exchange Bank, by same, 104 bales rags.
Corn Exchange Bank, by same, 94 bales bagging.
E. J. Keller Co., Inc., by same, 401 bales rags.
E. J. Keller Co., Inc., by same, 101 bales cotton waste.
E. J. Keller Co., Inc., Breedijk, Rotterdam, 309 bales rags.
Katzenstein & Keene, Inc., Sonora, Havre, 119 bales rags.
Katzenstein & Keene, Inc., Galtimore, Glasgow, 51 bales rags.
Katzenstein & Keene, Inc., Stockholm, Stockholm, 34 bales new cuttings.
Katzenstein & Keene, Inc., Springfield, Glasgow, 80 bales rags.
Salomon Bros & Co., Cressfield, Antwerp, 146 bales rags.
Salomon Bros & Co., Biez Ltd, Havre, 113 bales rags.
D. M. Hicks, Inc., H. Range, Leith, 145 bales rags.

Old Colony Trust Co., by same, 115 coils old rope.

NEW ORLEANS IMPORTS

WEEK ENDING DECEMBER 16, 1922

Castle, Gotthel & Overton, Kentucky, Rouen, 1,060 bales rags.
Castle, Gotthel & Overton, Andalusier, Antwerp, 658 bales rags.

NORFOLK IMPORTS

WEEK ENDING DECEMBER 16, 1922

News Print Paper Corp., Michigan, Hamburg, 165 rolls news print.
Bernstrom Paper Co., Inc., by same, 385 rolls news print.
R. A. Canthorne Paper Co., Inc., by same, 20 rolls paper.

WORK OF PAPER DIVISION REVIEWED

WASHINGTON, D. C., December 20, 1922 Dr. Julius Klein, chief of the Bureau of Foreign and Domestic Commerce in submitting his annual report this week to the Secretary of Commerce has the following to say about the work of the Paper Division of the bureau of which John Matthews, Jr., is now chief. Dr. Klein says:

The paper division was one of the last of the commodity divisions to be established during this fiscal year, being organized in January, 1922, with Grosvenor M. Jones as chief. Its formation was largely the result of the desire of the many manufacturers represented by the American Paper and Pulp Association to have a commodity division in the bureau to cover the paper trade.

Late in May Mr. Jones left the division to organize the finance and investment division, and Constant Southworth acted as chief until the end of the fiscal year.

Volume of Work Performed

The division has performed an almost steadily increasing volume of work. At the very start there was an unusual amount of correspondence, owing to the publicity attaching to the formation of the division. By the close of the fiscal year the correspondence handled by the division totaled 40 letters received and 53 sent out per week, aside from many circulars, reports, bulletins, etc., the preparation of which is steadily enlarging the volume of work performed by the division.

During June the total active personnel of the division consisted of two persons. It was therefore necessary to proceed somewhat more slowly than had been expected in the matter of several projects for allying the division more closely with the industry and for securing additional information on foreign markets for paper.

Nature of Trade-Promotive Efforts

A working arrangement was established whereby problems in foreign trade presented by members of the paper industry to trade associations should be referred to this division for consideration and problems in domestic trade should be referred to the proper trade association for consideration. The division is also acting as a medium to encourage trade associations to furnish figures on production, shipments, etc., for publication in the department's Survey of Current Business. It has also secured the assistance of trade associations in the work of distributing effectively certain publications, confidential bulletins, trade notices, etc., of this bureau among members of the paper industry.

The division has not yet issued many publications on account of its limited personnel, but has maintained a section in Commerce Reports and has materially enlarged the distribution of that weekly magazine in the paper trade. Two confidential circulars and one

Trade Information Bulletin have been issued and various items prepared for the trade press.

During June a proposed canvass of the paper industry to secure information regarding the experience and needs of paper manufacturers in the field of exporting was outlined by the division and presented to certain manufacturers and exporters for suggestions.

A general questionnaire on the markets for paper and paper products in all foreign countries was prepared. At the end of the fiscal year it was awaiting only further suggestions from the trade in order to be placed in final form for sending to consuls and bureau representatives in all parts of the world.

A large part of the division's time is consumed in replying to inquiries of all sorts relative to foreign trade and to the paper industry in foreign countries.

Rubber Latex for Paper Industry

The division has rendered many miscellaneous services of value regarding foreign trade to paper manufacturers and exporters. As an instance of this sort, one may mention the negotiations of the division in the endeavor to procure 500 gallons of rubber latex (the milk of the rubber tree) from the East India plantations through the good offices of Commercial Attaché Walter S. Tower, at London, in order that the Bureau of Standards and various paper manufacturers may experiment with a newly invented process for the use of rubber latex in making paper. By cable communication with Mr. Tower the division made arrangements for the sending of this shipment, and by correspondence with the interested concerns in the United States it arranged to divide up the shipment according to the demands. Laboratory experiments already have established the fact that certain characteristics of paper are improved by the introduction of latex.

To Build Big Dam in Lake St. John District

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., December 18, 1922.—No little interest was aroused in pulp and paper circles by the announcement just made by Hon. L. A. Taschereau, Prime Minister of the Province of Quebec, of another great dam in the pulpwood district. This dam is to be constructed at the Grand Discharge from Lake St. John, the headwaters of the Saguenay River. It will ultimately develop a million horsepower. An order in Council has been signed by the Lieutenant-Governor ratifying a contract between the Government and the Quebec Development Company, in which Sir William Price, of Quebec, and J. B. Duke, of New York, are interested.

Felt Test—Lowest Cost per Ton

If you judge felt values, not by what you put into the equipment, but what you get out of it—then you will specify ORR 3 stripe Endless Felts for ORR felts will produce the lowest cost per ton. They "stand up" under severe usage. Orr durability is acknowledged everywhere. Their strength and long life are as dependable as their reliability and quality.

In the 32 grades of Felts and Jackets we can match your most exacting demands. Tell us the kind of paper you desire to make, and we will send you samples of felts that will economically serve you and help you to produce paper at lowest cost per ton.

THE ORR FELT & BLANKET COMPANY, Piqua, Ohio

TAYLOR, BATES & CO.

*Members New York Stock Exchange
Members New York Cotton Exchange*

100 Broadway, New York
Tel. Rector 1140



BONDS Bought and Sold
STOCKS on
COTTON Commission

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41 EAST 42nd STREET
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1864

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"EXCELSIOR" FELTS

for every grade of

PULP AND PAPER

We continue to maintain at the top the quality of Excelsior Felts, as we have done since we, as pioneers, made the first endless paper machine felts manufactured in America.

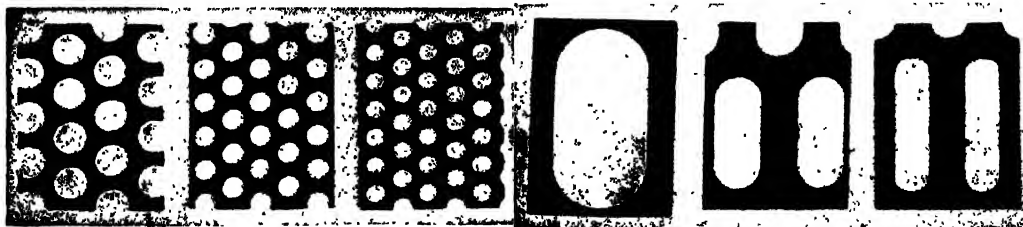
Seamless felts for fast running.
atin Style felts for finish.
pecial felts to meet every condition.
end us your felt problems.

KNOX WOOLEN COMPANY
CAMDEN, MAINE

SOLD BY
BULKLEY, DUNTON & COMPANY
75-77 Duane St., N. Y., and direct

PERFORATED METALS

*All sizes
and
shapes
of Holes*



*All kinds
and
thicknesses
of Metal*

For Centrifugal and Rotary Screens, Drainer Bottoms, Filter Plates, Pulp Washers, etc.

The Harrington & King Perforating Company

819 No. Union Ave., Chicago, Ill., U. S. A.

New York Office, 114 Liberty St.

Miscellaneous Markets

OFFICE OF THE PAPER TRADE JOURNAL,
TUESDAY, DECEMBER 19, 1922

BLEACHING POWDER—Despite the efforts of producers to boost bleach prices above the 2.00 cent mark, close competition has served to stabilize values. The demand for bleaching powder holds firm and manufacturers of the chemical are devoting more attention to the filling of next year's contracts than to the stimulating of spot prices.

BLANC FIXE—Blanc fixe has been moving to paper making consumers with fair regularity, the quoted price of \$80 to \$85 per ton being the basis for most transactions. This price is expected to obtain at least through the first few weeks of 1923.

CAUSTIC SODA—Caustic continues to hold a very strong position owing to restricted production and heavy demand. 2.50 cents a pound represents the average price quoted on standard grades of caustic on contract.

CHINA CLAY—The clay market in this country has been attended with a goodly volume of activity in recent months. Contract shipments of foreign clays, delayed during the coal strike when both English and American bottoms were diverted to the transport of English coal, are getting back to normal, while the spot demand is consistently regular. Imported China clay lists at \$16 to \$23 per ton, domestic washed at \$12 to \$15 and, unwashed at \$9.50 to \$12.

CASEIN—The casein situation is still "up in the air" in so far as the ability of dealers or consumers to secure spot supplies in any quantity is concerned. With the coming of summer and the "flush" milk season in the Argentine, foreign casein production has increased considerably, but this is offset by the fact that a great deal of Argentinian casein is being turned into other consuming channels, and domestic production has greatly fallen off. Casein for immediate shipment is cheap at any price, if the 25 and 26 cent bids of needy consumers may be accepted as a criterion of market conditions, although the bulk of contract business is being transacted below the 20 cent mark.

PAPERMAKERS' GLUE—Tub sizing hide glue is still listed by domestic producers at 13 to 20 cents a pound. Demand from the paper trade has improved during the casein shortage.

ROSIN—E, P and G grades of rosin, in barrels of 280-pounds are in steady call at prices varying from 6.90 to 7.10 cents a pound, New York. The Savannah, Ga. price is approximately 1 cent a pound less.

SALTCAKE—Production of saltcake is still far below normal. One prominent New York chemical dealer was told last week by an acid manufacturer that muriatic production was practically at a standstill. "If the demand for muriatic continues as weak as it is at present," he said, "we shall soon be manufacturing saltcake and dumping the acid in the river!" The consuming demand for both chrome and acid cake is exceptionally heavy, the former being listed at \$25 to \$26.50 a ton and the latter at \$28 to \$29.50.

SODA ASH—Forty eight per cent basis soda ash continues to be quoted at 1.20 cents a pound. The schedule prices of alkalis are not expected to vary appreciably with the coming of the new year. Competition and heavy potential production tend to hold prices down, while the export demand is almost insignificant.

STARCH—Bag quantities of powered starch are still quoted at 2.72 cents a pound, with barrel lots at 3.00 cents. Papermakers' starch is listed at 2.82 and 3.00 cents respectively for these amounts.

SULPHATE OF ALUMINA—Prospects for the new year in the alum market are encouraging. Dealers report that embargo and car shortage difficulties are gradually being surmounted and, catering to the stiff demand, shipments are moving forward at a better rate. Prices are steady at 1.50 to 1.75 cents a pound for commercial and 2.55 to 2.80 for iron free.

Market Quotations

(Continued from page 67)

Solid Ledger Stock.....	2.75	@	3.00	New Black Soft.....	.06 1/4	@	.06 1/4
Writing Paper.....	2.50	@	2.75	New Light Soft.....	.02 1/4	@	.02 1/4
No. 1 Books, heavy.....	2.25	@	2.50	ends.....	.02 1/4	@	.02 1/4
No. 2 Books, light.....	1.40	@	1.50	Khaki Cuttings.....	.03 1/4	@	.04 1/4
No. 1 New Manila.....	2.75	@	3.00	Corduroy.....	.03 1/4	@	.03 1/4
No. 1 Old Manila.....	1.50	@	1.75	New Canvas.....	.07 1/4	@	.08
Container Manila.....	1.25	@	1.30	New Black Mixed.....	.04	@	.04
Old Kraft.....	2.25	@	2.50	Old.....			
Overique News.....	1.50	@	1.60	White, No. 1—			
Old Newspaper.....	1.20	@	1.25	Repacked.....	.06	@	.06 1/4
No. 1 Mixed Paper.....	1.10	@	1.15	Miscellaneous.....	.04 1/4	@	.04 1/4
Common Paper.....	.80	@	.90	White, No. 2—			
Straw Board, Chip.....	.80	@	.90	Repacked.....	.03	@	.03 1/4
Binders Bd. Chip.....	.80	@	.90	Miscellaneous.....	.03	@	.03 1/4
Domestic Range—New				Thirds and Blues—			
Price to Mill, f. o. b. Phila.				Repacked.....	.00	@	.25
Shirt Cuttings—				Miscellaneous.....	.15	@	.15
New White, No. 1.....	1.15 1/4	@	1.15 1/4	Black Stockings.....	2.75	@	3.00
New White, No. 2.....	.06	@	.06	Roofing Stock—			
Silicas, No. 1.....	.06 1/4	@	.07	No. 1.....	1.30	@	1.35
New unbleached.....	.10 1/4	@	.10 1/4	No. 2.....	1.20	@	1.25
Washables.....	.03 1/4	@	.03 1/4	No. 3.....	1.10	@	1.15
Fancy.....	.04 1/4	@	.05 1/4	No. 4.....	1.10	@	1.15
Cottons—according to grades—				No. 5A.....	1.05	@	1.10
Blue Overall.....	.05 1/4	@	.05 1/4	B.....			nominal
New Blue.....	.02 1/4	@	.02 1/4	C.....			nominal

BOSTON

[FROM OUR REGULAR CORRESPONDENT]

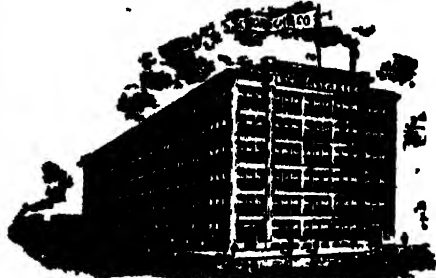
Paper				Wood, Vat Lined.....	50.00	@	65.00
Bonds.....	.08	@	.50	Filled News Board.....	42.50	@	57.50
Ledgers.....	.08 1/4	@	.55	Solid News Board.....	55.00	@	70.00
Writings.....	.08	@	.42	S. Manila Chip.....	72.50	@	75.00
Superfine.....	.16	@	.26	Pat. Coated.....	70.00	@	75.00
Fine.....	.15	@	.18				
Books, S. & S. C.....	.07 1/4	@	.12	Old Papers			
Books, M. F.....	.06 1/4	@	.09 1/4	Shavings—			
Books, coated.....	.09	@	.15	No. 1 Hard White.....	4.25	@	4.50
Label.....	.08 1/4	@	.13	No. 1 Soft White.....	3.00	@	3.50
News, sheets.....	4.75	@	6.00	No. 1 Mixed.....	1.25	@	1.50
News, rolls.....	4.50	@	5.75	Ledgers & Writings.....	1.75	@	2.00
Manila—				Solid Books.....	2.25	@	2.50
No. 1 Manila.....	\$6.00	@	7.00	Blanks.....	1.70	@	1.80
No. 1 Fiber.....	.06 1/4	@	.07	No. 2 Light Books.....	1.75	@	1.90
No. 1 Jute.....	9.00	@	10.50	Folded News, over-			
Kraft Wrapping.....	.07	@	.07	issues.....	28.00	@	30.00
Common Bogus.....	3.50	@	3.85	Gunny Bagging.....	.85	@	.90
Boards				Manila Rope.....	5.75	@	6.00
(Per Ton Destination)				Common Paper.....	.60	@	.70
Chip.....	\$50.00	@	55.00	Old News.....	.80	@	.90
News, Vat Lined.....	52.50	@	55.00	Old Kraft.....	2.00	@	2.10

TORONTO

[FROM OUR REGULAR CORRESPONDENT]

Paper				Sulphite, bleached.....	100.00	@	105.00
(Mill Prices to Jobbers f. o. b. Mill)				Sulphate.....	70.00	@	—
Bond—				Old Waste Papers			
Sulphite.....	.11	@	.12 1/4	(In carload lots, f. o. b. Toronto)			
Light tinted.....	.12	@	.13 1/4	Shavings—			
Dark tinted.....	.13 1/4	@	.15	White Env. Cut.....	3.85	@	—
Ledgers (sulphite).....	.13	@	.13	Soft White Book.....	—	@	—
Writing.....	.09 1/4	@	.12	Shavings.....	3.60	@	—
News, f. o. b. Mills—				White Blk News.....	2.00	@	—
Rolls (carloads).....	3.75	@	—	Book and Ledger—			
Sheets (carloads).....	—	@	4.50	Flat Magazine and			
Sheets (2 tons or				Book Stock (old).....	2.30	@	—
ver).....	—	@	4.75	Light and Crum-			
Book—				pled Book Stock.....	2.15	@	—
No. 1 M. F. (car-				Ledgers and Wra-			
loads).....	9.00	@	—	ings.....	2.50	@	—
No. 2 M. F. (car-				Solid Ledgers.....	2.75	@	—
loads).....	8.00	@	—	Manila—			
No. 3 M. F. (car-				New Manila Cut.....	2.00	@	—
loads).....	7.50	@	—	Printed Manila.....	1.25	@	—
No. 1 S. C. (car-				Kraft.....	2.50	@	—
loads).....	9.50	@	—	News and Scrap—			
No. 2 S. C. (car-				Strictly Overissue.....	1.50	@	—
loads).....	8.50	@	—	Folded News.....	1.50	@	—
No. 1 Coated and				No. 1 Mixed Pa-			
litho.....	14.00	@	—	pers.....	1.00	@	—
No. 2 Coated and				Domestic Range—			
litho.....	13.00	@	—	Price to mills, f. o. b. Toronto			
No. 3 Coated and				Per lb.			
litho.....	12.25	@	—	No. 1 White shirt			
Coated and litho,				cuttings.....	.11	@	.11 1/4
colored.....	14.25	@	—	No. 2 White shirt			
Wrapping—				cuttings.....	.06	@	.06 1/4
Grey.....	5.00	@	—	Fancy shirt cut-			
White Wrap.....	5.75	@	—	tings.....	.06	@	.06 1/4
"B" Manila.....	6.00	@	—	No. 1 Old white			
No. 1 Manila.....	7.25	@	—	tings.....	.04	@	.04 1/4
Fiber.....	7.25	@	—	Thirds and Blues			
Kraft, M. F.....	8.00	@	—	Per cent			
M. G.....	8.15	@	—	Black stockings.....	2.50	@	—
Pulp				Reeking stock:			
(F. o. b. Mills)				No. 1.....	1.25	@	—
Ground wood.....	42.50	@	—	No. 2.....	1.00	@	—
Sulphite easy bleach	55.00	@	—	Reeking stock:			
ing.....	60.00	@	—	No. 1.....	1.00	@	—
Sulphite news grade.....	55.00	@	60.00	Manila rope.....	6.10	@	—
				No. 2.....	1.50	@	—
				Gunny bagging.....	1.00	@	—

The Home of Quality



FACTORY
132ND TO 133RD ST & BROOK AVE

PAPER BAGS

Sacks and Specialties

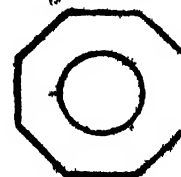
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SCHORSCH & CO.

Manufacturers

500 East 133d Street : New York

This Registered Trade
Mark Octagon



on a Paper
Bag Vouches for
Its Good Quality

The **B** [©] **PULPS**
INC

Quality: *It means more
than price*

"Hafslund Bear" "Forshaga"

BLEACHED SULPHITE

"Klarafors"

EASY BLEACHING SULPHITE

STRONG UNBLEACHED SULPHITE

"Hurum" "Bamle"

EXTRA STRONG KRAFT; BLEACHED AND
BLEACHABLE SULPHATE

"Edsvalla" 50% MOIST "Dejefors" DRY
WHITE SPRUCE—GROUND WOOD

Tonnage available on deck for prompt shipment

THE BORREGAARD CO., INC.
200 FIFTH AVENUE NEW YORK CITY

Clay
300 tons daily
AMERICAN MADE FOR AMERICAN TRADE

Some portion of our clay production is pulverized. That part of it which is pulverized is, as far as we know, the only pulverized clay which is washed and refined before being pulverized.

This insures greater freedom from impurities and an exceedingly uniform product.

Prices on M-E pulverized clay may surprise you even considering this additional treatment.

Let us submit samples and quote you

THE MINER-EDGAR CO.
MECCO 110 WILLIAM ST.,
NEW YORK



33 WEST 42ND ST., NEW YORK

Ecco Clays 500,000 Tons Annually

DELIVERIES FROM PRODUCER INSURE AND
ENABLE YOU TO PRODUCE UNIFORM PAPER

Highest Grades Filler and Coating Clays

WANT AND FOR SALE ADVERTISEMENTS

CLASSIFIED RATES

Minimum rate for advertisements of 25 words or less, first insertion, \$1.00.

SITUATION WANTED, 4 cents a word for first insertion and 2 cents a word for each subsequent insertion of same ad. No ad of less than 25 words accepted.

HELP AND MISCELLANEOUS WANTS, and **small For Sale Ads**, 4 cents a word for each and every insertion. No ad of less than 25 words accepted.

When answering advertisements, please address the Box Number given in ad.

Answers can be forwarded care Paper Trade Journal, and will be promptly forwarded without extra charge. All should be sent to the New York office, 10 East 39th Street. And all should be addressed as the advertisement directs in every case and not simply to the paper.

All classified ads for the current issue must be in hand not later than Monday preceding date of publication.

HELP WANTED

SALESMAN WANTED—Exceptional opportunity for a high class salesman with paper house starting Wedding Announcement Department. Must have managerial ability and experience in selling wedding announcements to printers, stationers, advertisers and department stores in New York City. Address communications to Box 5706, stating experience, salary expected and references. J-21

WANTED—Three back tenders for Harper Fourdrinier and cylinder running about 350 ft. Apply Marley Paper Manufacturing Co., Childs, Cecil Co., Maryland. D-28

SUPERINTENDENT—Manager wanted for by-sulphite liquor by-product plant. Must be familiar with various processes and have had successful experience in plant operation. State salary desired, experience, etc. Address, Box 5607, care Paper Trade Journal. J-11

PAPER SALESMAN—Excellent opportunity with old established New York paper house for competent salesman on salary and commission basis. Must be thoroughly familiar with all grades of wrappings. State age, experience, references, etc. Confidential. Address, Box 5708, care Paper Trade Journal. D-21

KRAFT WRAPPER paper mill superintendent wanted as well as machine tender, beaterman and good soda recovery man; plant will make 20 tons of kraft wrapper per day at start, now being installed, everything new, locality excellent; living cost very low; give complete statement of age, experience, size of family, salary, etc. Superintendent should be prepared to come at once. Address, Calcasieu Mfg. Co., Elizabeth, Louisiana. D-28

WANTED—Experienced chief engineer by Writing Mill in West, developing 1600 boiler horse power. Address, Box 5709, care Paper Trade Journal. D-28

SALES ORGANIZATION covering jobbing and chain store trade in New England have opening for additional lines of course paper on a commission basis. Address, Box 5710, care Paper Trade Journal. D-28

WANTED—Experienced cylinder machine tenders, back tenders, and beater engineers for looting mill located in the East. 3 tours. Wages: Machine tenders \$55 per hour; back tender \$60; beater engineer \$75. No labor trouble. Send experience and reference in first letter. Address, Box 5724, care Paper Trade Journal. J-11

EXPORT—Paper salesman to travel in Latin America for old established leading Export Paper House. Excellent opportunity for aggressive and experienced man. State full particulars. Address, Box 5725, care Paper Trade Journal. J-4

NOTICE

When replying to advertisements which have a **BOX NUMBER** always make certain you have the correct **Box Number** on the address. This will insure your letter being sent to the right advertiser.

HELP WANTED

PAPER BAG TENDER wanted to operate on Glassine and specialty bags, also taking charge of bag department. Give full particulars as to experience and salary. Address, Box 5711, care Paper Trade Journal. D-21

SUPERINTENDENT WANTED for Spiral wound paper tube and can factory. Must be thoroughly competent. An unusual opportunity. State experience and salary required. Address, Box 5712, care Paper Trade Journal. J-11

WANTED—Three super calendar runners in mill making high grade book paper. Two tours. Address Box 5713, care Paper Trade Journal. J-11

WANTED—Finisher for Book Mill. Must be experienced in bundling paper. Rate on piece work basis, averaging \$6.00 per day. Address, Box 5714, care Paper Trade Journal. J-11

PAPER AND TWINE SALESMAN—Have opening for salesman for New York City. Commission basis. Address, Box 5730, care Paper Trade Journal. D-21

SALESMAN WANTED with Established Trade in paper, paper boards or twine in or adjacent to New York City. Address, Great Notch Paper Co., Inc., 101-103 Varick Street, New York. J-25

SALESMAN WANTED—Salesman with experience in selling Waterproof Wrapping Paper to handle that line for a going concern. Address, Box 5642, care Paper Trade Journal. D-21

EXPERIENCED toilet paper converting operator to assist foreman. Steady position to intelligent young man who is looking for a future. Address, Box 5683, care Paper Trade Journal. D-21

SALESMEN WANTED—High grade, New York following. Exceptional opportunity to become associated with young growing paper house. Communications confidential. Address, Box 5682, care Paper Trade Journal. D-28

WANTED—Super Calendar Operators and Rewinder men. Good wages. Eight hours. Address, Box 5685, care Paper Trade Journal. D-21

WANTED—Young man with selling experience familiar with paper mills to sell Fourdrinier Wires and some other Materials. Address, Box 5647, care Paper Trade Journal. D-21

THOROUGHLY COMPETENT and practical glassine bag and envelope maker, one who understands the manufacturing of these goods in detail. Excellent proposition to bright, energetic young man. Address, Export Paper Products Co., Post Office Box 565, New Orleans, Louisiana. J-25

WANTED—Experienced Draftsman for paper mill in Middle West; must be familiar with boiler house, and building designing, also construction. Give all information in first letter. Address, Box 5686, care Paper Trade Journal. J-4

HELP WANTED

BOARD MILL SUPERINTENDENT—Wanted, high grade man to assume charge of reorganized board mill, net assets over \$300,000.00; located in Mid-west territory. Must invest \$20,000 in cash, for which he will receive 20 per cent interest in the company, and salary of \$6,000 per annum. Address, Box 5687, care Paper Trade Journal. D-21

SITUATIONS WANTED

CHEMIST, thoroughly trained and experienced in the manufacture of fibre board and paper, wants connection for chemical control and research work. Address, Box 5716, care Paper Trade Journal. J-4

PAPER SALESMAN—Young man. Active hard worker. Good address. Several years' selling experience, including some time with Course Paper mill. Desires connection with high grade New York Paper Dealer or Mill Office. Address, Box 5717, care Paper Trade Journal. J-18

SUPERINTENDENT, experienced on all grades of board and test liners, can put and keep plant in first class condition and get production, good on colors, not afraid to hustle. Best of references. Address, Box 5718, care Paper Trade Journal. J-4

SULPHITE MAN, university graduated chemist, with 2 years' experience from sulphite mill in Sweden and 1½ years in U. S. A. and Canada, desires position. Familiar with testing and control of all departments of a Sulphite Mill. Now employed. Address, Box 5719, care Paper Trade Journal. D-28

BOXBOARD A man thoroughly experienced in the manufacture of high grade boxboards, including strawboard and light straw, would make change. 10 years present position, especial ability in construction and maintenance as well as operation. Best of results in handling help. Can furnish best of references. Address, Box 5720, care Paper Trade Journal. J-18

CHEMIST, M. I. T. graduate with several years' unusual experience in sulphite pulp, coated glassine, jute and rope paper manufacture, who can show a record of real economies in reduction of costs, will be available in January. Excellent references from previous connections who are of highest character in the trade. Address, Box 5722, care Paper Trade Journal. D-21

A YOUNG MARRIED MAN is open for connection with paper mill or paper jobber. Thorough paper experience in actual manufacturing as well as the office end, will make him of value to concern needing a man who can efficiently handle correspondence, purchasing, financing, and general office management. Address, Box 5613, care Paper Trade Journal. D-28

SALESMAN—Chicago and Central States Territory. Seven years' successful experience handling jobbing, publishing, printing and consuming trade. Excellent knowledge of book papers and kraft. Coarse and fine papers and boards. Address, Box 5731, care Paper Trade Journal. D-28

WANTED POSITION as Assistant Superintendent or Tour Boss. Eighteen years' experience. Experienced on all grades of fine papers. Good on colors. Will go any place. Best of references furnished. Address, Box 5668, care Paper Trade Journal. D-21

SALESMAN with wide missionary experience selling high grade coated and specialty papers, desires position with mill selling to jobbers and converters. Address, Box 5732, care Paper Trade Journal. D-21

WANTED—Position as superintendent or assistant superintendent in paper mill making No. 1 book. Middle aged man, married, with good references from last employer. Good reasons for making change. Address, Box 5721, care Paper Trade Journal. D-28

WANTED—A position as salesman by young man thoroughly familiar with manufacture of specialties. 15 years' experience. Best of references as to character and ability. Address, Box 5723, care Paper Trade Journal. D-21

SITUATIONS WANTED

SULPHITE SUPERINTENDENT — Up-to-date superintendent, fourteen years' experience in manufacture of news and book sulphite pulp, open for employment after January first. Experienced in Tower and mill of lime systems. Repairs operation and constructions. References. Address, Box 5723, care Paper Trade Journal J-4

SUPERINTENDENT desires position, 18 years' experience in the manufacture of tissues, all grades; equally efficient in either wood or stock. High grade man in waxing tissues, all grades twines and carpet fibres for twisting. Kraft papers of quality and strength. Thoroughly understands the converting of crepe and waxed papers. A-No. 1 on color. References. Address, Box 5726, care Paper Trade Journal J-15

PAPER MAKER of ability, understands paper from A to Z. Eighteen years' jobbing experience, desires to connect with good reliable house as manager or buyer, understands the twine and cordage business thoroughly. References. Address, Box 5727, care Paper Trade Journal J-11

ADVERTISER 38 years, active and loyal, 20 years' experience with large coarse paper house in Metropolitan district stock, shipping, office, selling and buying seeks connection where his knowledge and some hard work could be utilized. Address, Box 5728, care Paper Trade Journal D-25

MAN with Executive Ability desires position as mill manager. Years of experience in paper manufacturing. Expert in sales, purchasing, cost, accounting and office supervision. Address, Box 5679, care Paper Trade Journal D-21

POSITION WANTED by a party thoroughly experienced in the exporting of paper to Cuba, Mexico, South America, Japan, China and Australia and having an intimate knowledge extending over 20 years in the importing of all kinds of paper from England, France, Germany, Scandinavia and Finland together with a thorough knowledge of English and German and a working knowledge of French and Spanish. Location in this country no object. Address, Box 5619, care Paper Trade Journal. tf

HELP WANTED**General Factory Superintendent**

MIDDLE WEST waxed paper plant requires a thoroughly experienced executive for manufacturing.

The man who qualifies must have experience of the most practical kind. Must be an expert on color printing, plate work, layouts, waxing, and be able to operate the mechanical equipment by employing the most up to date time saving methods. Further, he must prove his ability to handle men.

This is a big position with exacting requirements. The right man will command a salary commensurate. Correspondence is invited and will be held strictly confidential. Detailed information covering experience, with references required before interview. Address Box 5715, care Paper Trade Journal J-4

WANTED:

Production manager to handle all departments of eastern waxing plant. Permanent position with progressive organization. Advise experience and qualifications. Address, Box 5688, care Paper Trade Journal. D-21

SITUATIONS WANTED

PAPER SALESMAN: New York City, who can produce large amount of business, would like connection with Paper House, or organization, having good mill facilities. Drawing account on commission basis. Address, Box 5596, care Paper Trade Journal. tf

SUPERINTENDENT of ability desires to make a change. Experienced on all grades of fine Papers, Bond, Ledger, Book, Kraft, Waxing, Manillas, and other Grades. Address, Box 5547, care Paper Trade Journal. D-21

SUPERINTENDENT open for position, 20 years' experience in the manufacture of all the better grades of combination and container board. Can get quality and production. Thoroughly familiar with repairs, maintenance and operation of every department of mill. Can furnish the very best of references. Address, Box 5611, care Paper Trade Journal. J-11

WELL EDUCATED YOUNG MAN with 12 years' practical experience, wishes position as superintendent, assistant superintendent, or assistant manager with any reliable concern. Will go anywhere. Best of references furnished. Address, Box 5651, care Paper Trade Journal J-25

PLANT MANAGER—Felt, News, and Kraft experience desires to make change; capable executive, systematizer and producer of results. Address, Box 5687, care Paper Trade Journal D-21

WANTED—Position as Assistant Manager or similar executive position or Salesman. Thorough Mill, Selling and Office Experience. Now connected with a leading mill making Sulphite, Bond, Ledger and writing, but desires to make a change. Highest references. Address, Box 5669, care Paper Trade Journal D-28

SUPERINTENDENT—With wide experience in fine and coarse mills, fourdrinier and cylinder machines. Go anywhere. Pacific Coast preferred. Best references. Address, Box 5670, care Paper Trade Journal D-21

SALESMANAGER AND EXECUTIVE wants position with well established, progressive Paper House. Will consider any territory. Thorough knowledge fine and coarse papers, also cordage. College education. Broad experience obtained in many parts of country. Address, Box 5671, care Paper Trade Journal D-21

EFFICIENT, CAPABLE, up-to-date Superintendent wishes connection. All grades Stocks, Boards, and Cylinder Papers, Box, Jute, Container, Wrappings, Tissue and Specialties. Good executive, honest. Can get production. Address, Box 5672, care Paper Trade Journal. D-23

POSITION WANTED—Man of ability, with twenty years' experience in mills manufacturing high grade bleached and unbleached sulphite pulp, desires position as sulphite superintendent, or assistant manager. Experienced in constructing, operating and maintaining; capable of handling men, able to take full responsibility to secure results. Temperate and reliable. At present connected. Address, Box 5678, care Paper Trade Journal D-21

TWO PAPER MEN with mill and jobbing experience are open for a mill agency proposition for Greater New York and vicinity. Lines desired are cardboard, plain and coated, book and coated papers, fancy papers and covers. Mr. Manufacturer if you are not getting results from your present connections you would do well to write to Box 5690, care Paper Trade Journal D-23

UNIVERSITY GRADUATE, 1916 A. B. and Bachelor of Commerce. At present engaged by world's largest manufacturers of fibre and corrugated boards. Three years' experience in sale and production of heavy paper and boards. Desires any position (preferably in selling organization) in which one hundred per cent determination and honest effort to succeed will be rewarded by opportunities for advancement. Address, Box 5689, care Paper Trade Journal. D-21

EXECUTIVE of large plant wants management and sales of small mill (fourdrinier machine) to make specialty of great promise. Address, Box 5700, care Paper Trade Journal. D-21

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SUPERINTENDENT wishing to make change. Life time experience on board of all grades. Address, Box 5691, care Paper Trade Journal. D-28

SUPERINTENDENT with wide experience making all grades tissue and light weights and colored specialties on Fourdrinier, Harper Yankee and cylinder machines. would like connection with good mill. Address, Box 5692, care Paper Trade Journal. D-28

SUPERINTENDENT desires to make change. Experienced on book, bond, kraft and manila papers. Practical and executive ability. Address, Box 5693, care Paper Trade Journal. J-25

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CHILLED CALENDERS—One 86" six roll. One 82" five roll. One 66" five roll. One 58" five roll. One 54" five roll.

SLITERS AND WINDERS—One 120" Warren. One 108" Kidder. One 110" two drum Moore & White winder. One 82" Langston. One 46" Langston. One 40" Kidder.

BEATERS—Three N. & W. 72"x42". One Hol-yoke 54"x60" equipped with four Tyler washers. One Dills 62"x50" iron tub. One Jones 62"x52". One Dillon 60"x48". Two Emerson 54"x60". Three Downingtown 54"x42" iron tub. One Jones 42"x38". Seven Hornbe 36"x36". One N. & W. 36"x26". Two No. 2 Claffins. Two No. 1 Claffins.

JORDANS—One Appleton Wagg Majestic. Two No. 2 Dillon Improved. One Large Hornbe. Two Monarch. One Jones Standard. One Pope brushing.

SCREENS—One 12 plate. Two 8 plate open side Packer. Two 6 plate. Three White auxiliary and one Moore & White auxiliary. One single cylinder Wanda.

STUFF PUMPS—Deane triplex 9"x8". Goulds triplex 8"x12". Goulds triplex 6"x12". Beloit triplex 6"x14". Twelve 5" pcst.

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REAM CUTTERS—Two 48" Acme. One 44" Hol-yoke Seybold.

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SITUATIONS WANTED

POSITION WANTED as tour boss or machine tender. Have had 18 years' experience running all grades of box board paper. Understands maintenance of plant and handling of men and getting production. Address, Box 5694, care Paper Trade Journal. D-21

MACHINE TENDER wants position. Experience on all grades tissue and crepe. Can handle cylinder and Fourdrinier with top felt or without. Am married, have family. Address, Box 5695, care Paper Trade Journal. D-28

MASTER MECHANIC or chief millwright wishes to make change. 21 years' experience in pulp and paper mills. Have served as paper maker, millwright, machinist and master mechanic. Can put mill in shape and keep it there at a saving to firm. Not afraid of work, able to handle men. References. Address, Box 5697, care Paper Trade Journal. D-35

POSITION WANTED; all around man, looking out order schedules for mill runs. Looking after manufacturing details. Handling all correspondence pertaining to sales, etc. Now holding position this capacity with a leading mill, but desires to make a change. Have very thorough mill and office experience. Very best references. Address, Box 5701, care Paper Trade Journal. J-4

ESTABLISHED FIRM of mill agents with large trade in New England seeks connections with mills making coarse papers, boxboards, or paper specialties. Address, Box 5684, care Paper Trade Journal. D-28

WANTED position as assistant superintendent or foreman. Twenty-two years' experience on fourdrinier machine making sulphite and rag papers. Principally writings, bonds and ledgers. Address, Box 5688, care Paper Trade Journal. J-11

FOR SALE

FOR SALE—6 Farnum Drives. Complete Triple-Deck frames for 44 Dryers. Will arrange terms to suit. Chesapeake Paper Board Co., Baltimore, Maryland. tf

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FOR SALE—One Williams Standard Pulp Tester with Scales. Practically new. Address, Box 5673, care Paper Trade Journal. D-21

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J-11

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FOR SALE—Deane Duplex Fire Pump, 14 3/4" x 10, capacity 600 gallons per minute. Address, Box 5482, care Paper Trade Journal. tf

FOR SALE—Three Pitchburg Engines with the following characteristics. H. P., 40. Steam pressure, 125 lbs. Back pressure, 20 lbs. Diameter of cylinder, 10 inches. Stroke, 18 inches. R. P. M., 70 to 135. Fly wheel, 66 inches. Steam, 3 inch. Exhaust, 3 1/4-inch. Length of engine, 12 feet 6 inches. Width of engine, 6 feet 8 inches. This engine can be direct connected, or a belt drive. We also have one American Ball double Horizontal Variable speed engine. H. P., 250. Steam pressure, 140 lbs. Back pressure, 20 lbs. Diameter of cylinder, 14 inches. Stroke, 12 inches. R. P. M., 70 to 280. Fly wheel, 72 inches. Steam, 5 inches. Exhaust, 5 inches. Length of engine, 11 1/4 inches. Shipping weight, approximately 24,000 lbs. These engines in first class condition and have only been idle about three weeks' time. Address, Box 5702, care Paper Trade Journal. D-21

FOR SALE—Two Potdevin Glassine Bag Machines. Perfect condition. Price reasonable. Write for further information. Address, The Peerless Mfg. Co., Norristown, Pa. tf

MISCELLANEOUS

WANTED—A pair of chilled iron calender rolls, 42 or 44-inch, 12-inch diameter. Submit sketch giving all dimensions, with offer. Address, G. Edmundson, P. O. Box 1139, City Hall Station, New York. D-21

WANTED—Cast iron dryers, diameter 36" x 48" to 54" face. O. S. Kirkeby, Room 706, 61 Broadway, New York. tf

WANTED to hear from parties who would be interested in joining me in building a paper mill in Southern California to make Tissue and Light Weight Wrappers. Address, Box 5674, care Paper Trade Journal. D-21

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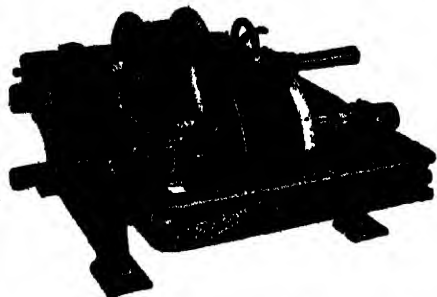


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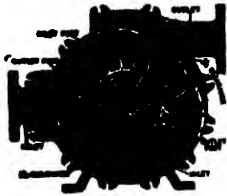
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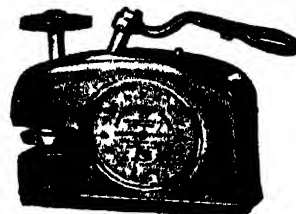
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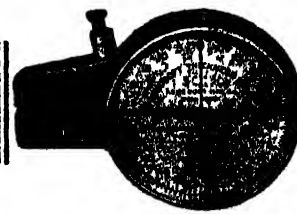
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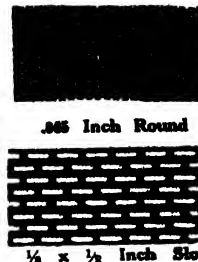
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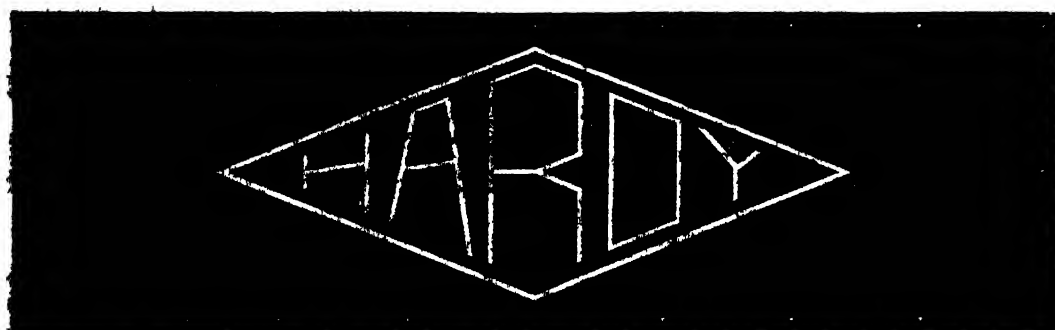
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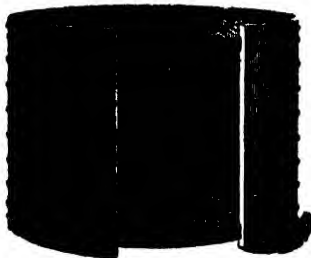
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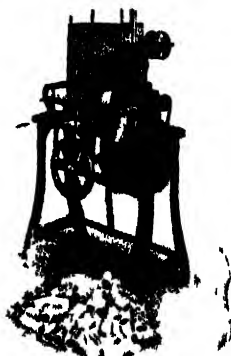
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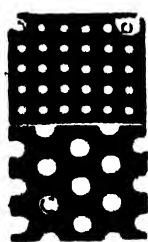
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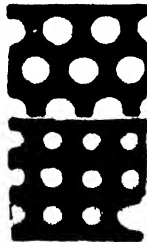
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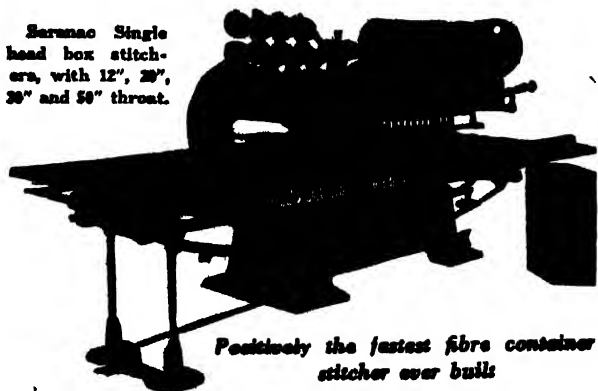
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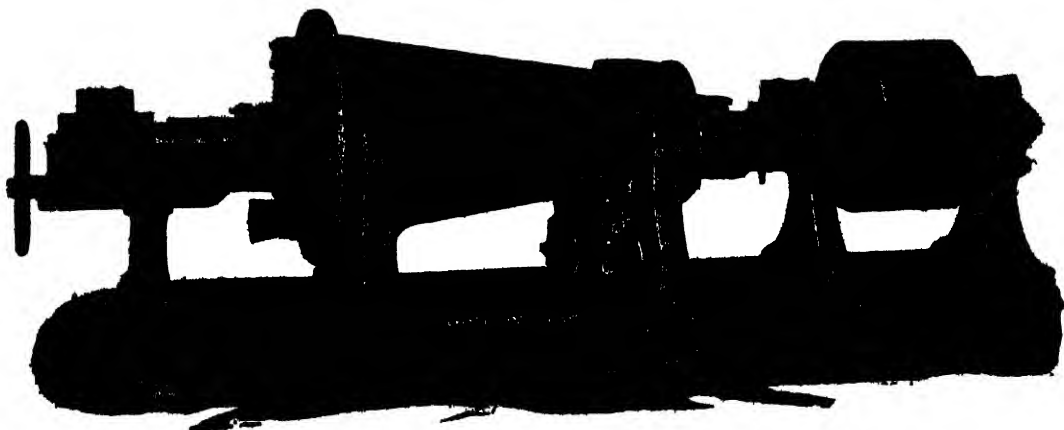
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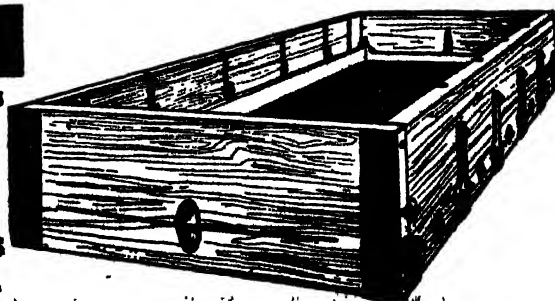
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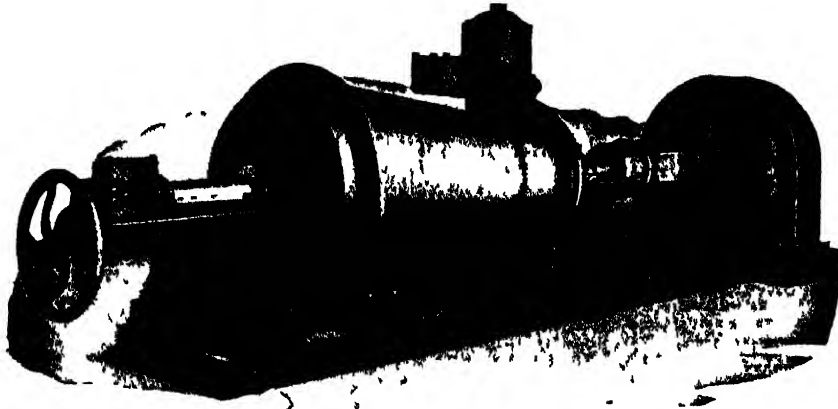
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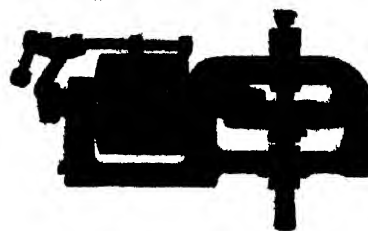
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